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United States
Department
of Agriculture

Forest Service

**Pacific
Northwest
Region**

1990

Land and Resource Management Plan

Mt. Hood National Forest

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Acronyms and Abbreviations Used in This Document

AMP	Allotment Management Plan
AMS	Analysis of the Management Situation
AQRV	Air Quality Related Value
ARP	Aggregate Recovery Percent
ASQ	Allowable Sale Quantity
ATV	All Terrain Vehicle
AUM	Animal Unit Month
BF	Board Foot
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BMP	Best Management Practice
BPA	Bonneville Power Administration
BTU	British Thermal Unit
CEQ	Council on Environmental Quality
CF	Cubic Feet
CFL	Commercial Forest Land
CFR	Code of Federal Regulations
CMAI	Culmination of Mean Annual Increment
CRGNSA	Columbia River Gorge National Scenic Area
CRITFC	Columbia River Inter-tribal Fish Commission
DBH	Diameter at Breast Height
DEIS	Draft EIS
DEQ	Department of Environmental Quality (Oregon)
DFSIM	Douglas Fir Growth and Yield Simulator
DP-DFSIM	Dynamic Programing version oDouglas Fir Growth and Yield Simulator
EA	Environmental Analysis
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEIS	Final EIS
FERC	Federal Energy Regulatory Commission
FMAZ	Fire Management Analysis Zone
FONSI	Finding Of No Significant Impact
FORPLAN	Forest Planning Model
FPFO	Forestry Program for Oregon
FS	Forest Service
FSH	Forest Service Handbook
FSM	Forest Service Manual
FY	Fiscal Year
GIS	Geographic Information System
HCI	Habitat Capability Index
ICO	Issues, concerns, and Opportunities
ID	Interdisciplinary
IDT	Interdisciplinary Team
IMPLAN	Input/Output Model
KGRA	Known Geothermal Resource Area
KV	Knutson-Vandenburg
LOD	Large Organic Debris
LRMP	Land and Resource Management Plan
LTI	Legal Trout Index
LTSY	Long Term Sustained Yield
LTSYC	Long Term Sustained Yield Capacity
M	Thousand
MA	Management Area
MAUM	Thousand Animal Unit Month
MBF	Thousand Board Feet
MCF	Thousand Cubic Feet
MIS	Management Indicator Species
MM	Million
MMBF	Million Board Feet
MMCF	Million Cubic Feet
MMRs	Minimum Management Requirements
MOM	Mature and OverMature
MOU	Memorandum of Understanding
MR	Management Requirement
MRVD	Thousand Recreation Visitor Days
MTHNF	Mt. Hood National Forest
MWFUD	Thousand Wildlife/Fish User Day
NA	No Action
NC	No Change
NDF	Nondeclining Flow
NEPA	National Environmental Policy Act
NF	National Forest
NFMA	National Forest Management Act
NPB	Net Public Benefits
ODFW	Oregon Department of Fish and Wildlife
ORC	Oregon Rivers Council
ORV	Off Road Vehicle
PAOT	Persons at One Time
PCNST	Pacific Crest National Scenic Trail
PL	Public Law
PM10	Particulate Matter less than 10 microns in size
PNV	Present Net Value
PNW	Pacific Northwest
PRIA	Public Rangelands Improvement Act
R6	Region 6 (Pacific Northwest Region,USDA Forest Service)
RAREII	Roadless Area Review and Evaluation II
RIM	Recreation Information Management
RM	Roaded Modified
RN	Roaded Natural
RNA	Research Natural Area
ROD	Record of Decision
ROS	Recreation Opportunity Spectrum
RPA	Forest and Rangeland Renewable Resources Planning Act of 1974
RVD	Recreation Visitor Day
S&G	Standard and Guideline
SCORP	Statewide Comprehensive Outdoor Recreation Plan
SEIS	Supplement to the EIS for an Amendment to the Pacific Northwest Regional Guide, Spotted Owl Guidelines.
SHCI	Smolt Habitat Capability Index
SHPO	State Historical Preservation Officer (Office)
SIA	Special Interest Area
SIC	Standard Industrial Classification
SMU	Streamside Management Unit
SOHA	Spotted Owl Habitat Area
SPM	Semiprimitive, Motorized
SPNM	Semiprimitive, Nonmotorized
SRI	Soil Resource Inventory
T&E	Threatened and Endangered
TSI	Timber Stand Improvement
TSP	Total Suspended Particulates
TSPQ	Timber Sale Program Quantity
USF&W	United States Fish & Wildlife Service
USDA	United States Department of Agriculture
USDI	United States Department of Interior
USGS	United States Geological Survey
VAC	Visual Absorption Capacity
VMS	Visual Management System
VQL	Visual Quality Level
VQO	Visual Quality Objective
WFUD	Wildlife & Fish User Day
WRS	Wilderness Resource Spectrum
WSR	Wild and Scenic River

Forest Land and Resource Management Plan

Mt. Hood National Forest

Preface

This Forest Land and Resource Management Plan (Forest Plan) has been prepared according to Secretary of Agriculture regulations (36 CFR 219) which are based on the Forest and Rangeland Renewable Resources Planning Act (RPA) as amended by the National Forest Management Act of 1976 (NFMA). The plan has also been developed in accordance with regulations (40 CFR 1500) for implementing the National Environmental Policy Act of 1969 (NEPA). Because this plan is considered a major Federal action significantly affecting the quality of the human environment, a detailed statement (environmental impact statement) has been prepared as required by NEPA. The Forest Plan represents the preferred alternative as identified in the Final Environmental Impact Statement (FEIS) for the Forest Plan.

If any particular provision of this Forest Plan, or the application thereof to any person or circumstances, is found to be invalid, the remainder of the Forest Plan and the application of that provision to other persons or circumstances shall not be affected.

The Forest Plan will guide all natural resource management activities and establish management standards and guidelines for the Mt. Hood National Forest, hereinafter also called the Forest. It describes resource management practices, levels of resource production and management, and the availability and suitability of lands for resource management.

Additional information about this plan is available from:

Forest Supervisor
Mt. Hood National Forest
Supervisors Office
2955 NW Division Street
Gresham, OR 97030
Phone: (503 666-0700)

Huckleberry pickers, circa 1920s.

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Chapter 1

Forest Plan Introduction

Chapter 1

Forest Plan Introduction

Mt. Hood, and bear grass in bloom.

Purpose of the Forest Plan

The Forest Plan guides all natural resource management activities and establishes management standards and guidelines for the Mt. Hood National Forest. It describes resource management practices, levels of resource production and management, and the availability and suitability of lands for resource management.

The Forest Plan:

- Establishes Forestwide multiple-use goals and objectives;
- Establishes Forestwide standards and guidelines for future activities;

- Establishes management area direction, including management area prescriptions and standards and guidelines applying to future management activities in that management area;
- Establishes the allowable sale quantity for timber and identifies land suitable for timber management;
- Establishes monitoring and evaluation requirements;
- Establishes nonwilderness multiple-use allocations for the Olallie/Mt. Jefferson roadless area that was reviewed under 36 CFR 219.17 and not recommended for wilderness designation.

The Forest Plan embodies the provisions of the National Forest Management Act, the implementing regulations, and other guiding documents. Land use determinations, prescriptions, and standards and guidelines constitute a statement of the plan's management direction; however, the project outputs, services, and rates of implementation are dependent on the annual budgeting process.

The Forest Plan will be revised on a 10 year cycle, or at least every 15 years. It may also be revised whenever the Forest Supervisor determines that conditions or demands in the area covered by the Plan have changed significantly or when changes in policies, goals, or objectives would have a significant effect on Forest-level programs. The Forest Plan also may be amended.

Relationship of the Plan to Other Documents

Final Environmental Impact Statement and Record of Decision

This Forest Plan sets forth the direction for managing the land and the resources of the Forest. The Forest Plan results from extensive analyses and considerations that are addressed in the accompanying Final Environmental Impact Statement (FEIS), and Record of Decision (ROD). The planning process and the analysis procedures used to develop this Plan are described or referred to in the FEIS. The FEIS also describes other alternatives considered in the planning process. Specific activities and projects will be planned, analyzed, and implemented to carry out the direction in this Plan. Project level environmental analysis will use the data and evaluations in the Forest Plan and FEIS as its basis. Project level environmental analysis will be tiered to the FEIS accompanying this Plan.

Regional Guide

The Regional Guide for the Pacific Northwest Region, as amended December 8, 1988, provides direction for National Forest Plans. It includes standards and guidelines addressing the major issues and management concerns considered at the Regional level to facilitate Forest planning.

FEIS for Managing Competing and Unwanted Vegetation

The Forest Plan incorporates the Pacific Northwest Region's FEIS for Managing Competing and Unwanted Vegetation. In implementing the Forest Plan through project activities, the Forest will comply with the Record of Decision issued by the Regional Forester dated December 8, 1988, and the Mediated Agreement of May, 1989. Use of all vegetation management techniques is allowed only when other methods are ineffective or will unreasonably increase project costs. Emphasis must be on prevention and early treatment of unwanted vegetation and full public involvement in all aspects of project planning and implementation. Information about the vegetation management FEIS, ROD, and Mediated Agreement are available at the Forest Supervisor's Office.

Special Area Plans

Bull Run Planning Unit

The regulations [36 CFR 219.2(b)] guiding the development of Forest Plans state that "(if), in a particular case, special area authorities require the preparation of a separate area plan, the direction in any such plan may be incorporated without modification." For this reason the direction contained in the Bull Run Planning unit FEIS is incorporated unchanged in this Forest Plan.

Public Law 95-200 established the basic objectives, policies, and direction for the future management of the Bull Run Watershed Management Unit. This law required the preparation of a land management plan to carry out the intent of the Act. The Bull Run Planning Unit Final Environmental Impact Statement (FEIS) was developed with extensive public involvement and implemented in early 1979.

The Bull Run area has been managed under the Bull Run Planning Unit FEIS as described for approximately ten years.

Columbia River Gorge National Scenic Area

On November 17, 1986, the Columbia River Gorge National Scenic Area Act covering approximately 292,600 acres was signed. The act has two purposes:

- To protect and provide for the enhancement of the scenic, cultural, recreational, and natural resources of the Gorge, and
- To protect and support the economy of the Gorge by encouraging growth to occur in existing urban areas and by allowing future economic development outside these areas if it is compatible with Gorge resources.

To achieve these purposes the Act called for a partnership between the USDA-Forest Service and the Bi-State Columbia River Gorge Commission to develop a Land Use Plan for the area which would fine tune the goals of the legislation and guide future activities in the Gorge.

There are approximately 39,100 acres of the Columbia River Gorge National Scenic Area within the boundary of the Mt. Hood National Forest.

The Land Use Plan for the Gorge is not yet finalized. Therefore, this Forest Plan has identified interim management direction for National Scenic Area lands within the Forest boundary. This direction has been coordinated with the Scenic Area planning effort and is consistent with purposes of the Act. Once the commission completes its task, the Forest Plan will be amended to incorporate any needed modifications to insure consistency with the Columbia River Gorge National Scenic Area Management Plan. Management for newly acquired land under the Scenic Area Act will be directed by the Scenic Area Management Plan.

Other Plans

This Forest Plan serves as the single land management plan for the Mt. Hood National Forest. All other land management plans are replaced by the direction in this Plan; see Chapter 5 for a listing of existing plans that this Forest Plan supercedes.

Plan Organization

The Forest Plan consists of five chapters and appendices:

Chapter One: Forest Plan Introduction

This chapter describes the purpose of the Plan, summarizes its contents, establishes the subject areas covered, and discusses the relationship of the Plan to other documents.

Chapter Two: Summary of the Analysis of the Management Situation (AMS)

This chapter reviews the existing management situation for each resource. When appropriate, it summarizes the relationships between demand and supply of the Forest's resources.

Chapter Three: Response to Public Issues and Management Concerns

This chapter addresses how the Forest Plan responds to the Public Issues related to the management of the Forest.

Chapter Four: Management Direction

This chapter presents the management goals, objectives, standards and guidelines that direct the management of the lands and resources of the Forest.

Chapter Five: Implementation

This chapter explains how management direction must be implemented, how implementation activities are to be monitored and evaluated, and how the plan may be updated.

Appendices

These provide detailed schedules of projected activities, and present specific management plans.

Forest Description

The Forest lies directly east of the City of Portland and is divided into seven Ranger Districts as shown by the boundaries and headquarters on the accompanying map (Map One-1).

As shown by the map, the Forest is bounded on the north by the Columbia River, which also divides Oregon and Washington. Most of the Forest is located in Multnomah, Clackamas, Hood River, and Wasco counties. A small portion adjacent to the Willamette National Forest is in Marion and Jefferson counties. The Warm Springs Indian Reservation is located just outside the southeast border of the Forest. The lands of the Forest total a little more than one million acres, with the largest acreage on the west side of the Cascade Mountain Range.

The Portland Metropolitan Area, with a 1985 population estimated at 1.1 million people, exerts the most significant social and economic influences on the Forest. Living only 50 miles from the Forest, most of Portland's residents can reach its more accessible areas in less than an hour's drive. In contrast to the urbanized counties on the west side of the Forest, Hood River and Wasco counties on the east are sparsely populated and rural. Ranching, farming, and timber are mainstays of these two counties.

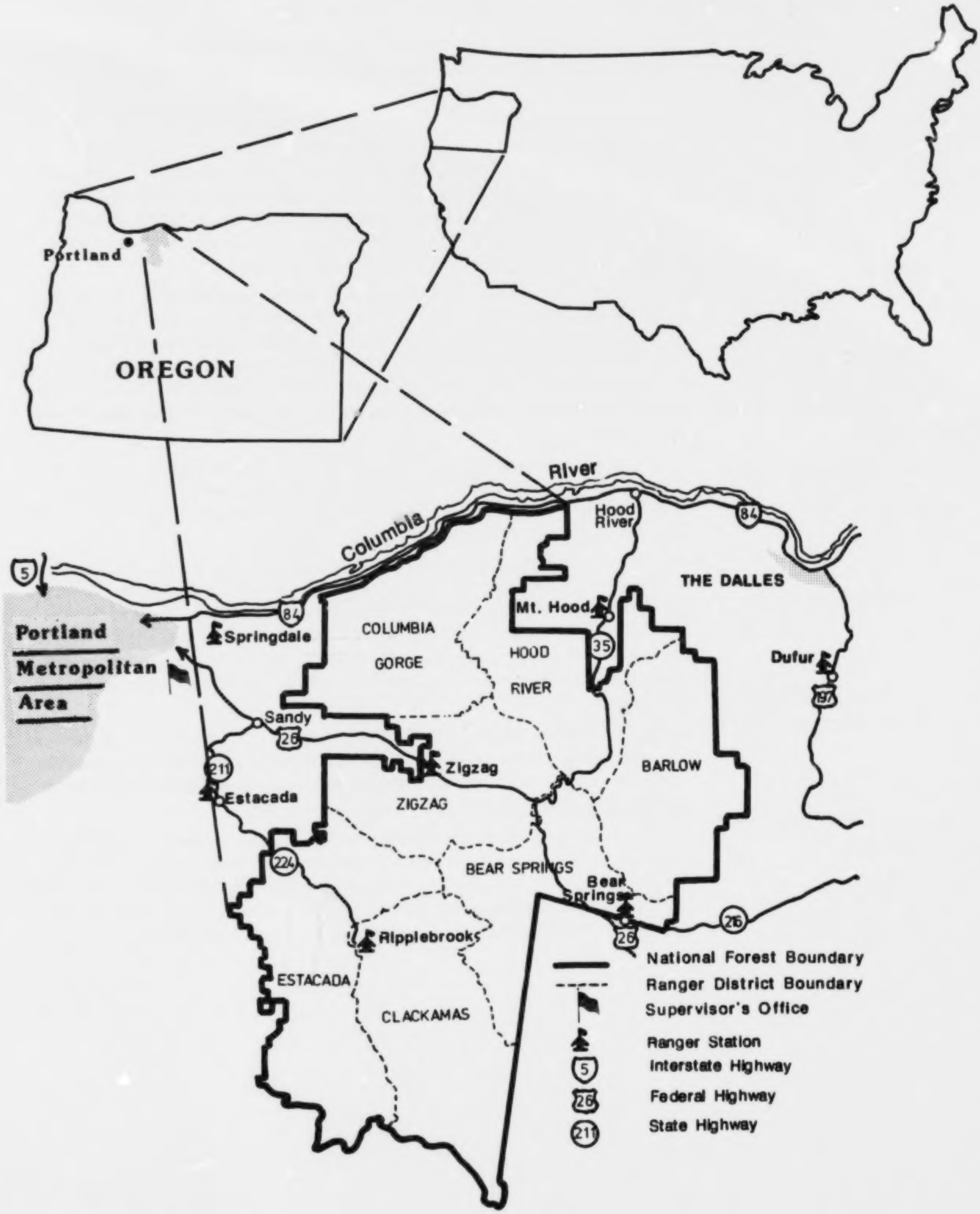
Huge expanses of the Forest, especially on the west side, are rugged. Above them all towers majestic Mt. Hood, the tallest peak in Oregon, and one of the tallest in the Northwest. One of the volcanoes in the Cascade Mountain Range, this two-mile-high mountain never loses its cap of snow.

The Pacific side of the Forest is virtually a different climatic and biological world compared to the east side. The climate of the west side's lower areas is mild and wet. Reflecting the climate, plant life is dominated by Douglas-fir trees in dense, cathedral-like stands of old growth, or in open stands carpeted with colorful flowers. The east side is comparatively dry and temperatures are more extreme. Relatively open growths of Ponderosa pine mixed with oak dominate the plant life in this harsher climate.

Bordering the Forest on the north, the Columbia River cuts its way through the Cascade Mountains to form one of the region's most magnificent sights, the Columbia Gorge. Steep rock walls form the face of the Gorge, and streams from high in the Forest tumble down these walls in spectacular waterfalls.

About one-third of the Forest's extensive stands of timber consists of very large trees two-hundred or more years old. In addition to its obvious supply of timber, the Forest contains other resources such as water, fish, wildlife, opportunities for dispersed and developed recreation, and extraordinary scenery. These resources offer a wide range of opportunities and benefits to people of all walks of life.

Map One-1 Mt. Hood National Forest Location Map


Portland
OREGON
Columbia River
Hood River
84
5
THE DALLES
Portland Metropolitan Area
Springdale
COLUMBIA GORGE
Mt. Hood
HOOD RIVER
35
Dufur
197
Sandy
26
211
Estacada
Zigzag
ZIGZAG
BARLOW
224
BEAR SPRINGS
Bear Springs
26
Ripplebrook
ESTACADA
CLACKAMAS
National Forest Boundary
Ranger District Boundary
Supervisor's Office
Ranger Station
5 Interstate Highway
26 Federal Highway
211 State Highway

Chapter 2

Summary of the Analysis of the Management Situation

Chapter 2

Summary of the Analysis of the Management Situation

Introduction

This chapter briefly summarizes the 1985 Analysis of the Management Situation (AMS).

Supply estimates used in this section of the Plan are based on maximum physical and biological production of goods and services as published in the Analysis of the Management Situation, March 1985. The production potential for each resource, titled "Supply" in the discussions, is the total amount of goods or services (yields) which could be produced while meeting legal and other minimum requirements. Maximum potentials for all resources cannot be achieved at the same time. When the potential for one resource is maximized, the production of another resource, with few exceptions, would be reduced. For example, the maximum production of timber would cause related reductions in unroaded recreation and visual quality.

Demand projections in this section of the Plan are based on a variety of information. Projections necessarily include assessments of future management needs based on historical data, population projections, other agency data, and professional observations.

This chapter also includes a brief overview of the social and economic situation, along with a summary table of supply and demand projections.

A section at the end of this chapter identifies the Forest's needs for information, inventory, and research identified through the analysis and development of the FEIS and this Land and Resource Management Plan for the Forest.

Supply/Demand Narratives by Resource

Timber

The Existing Situation and Requirements

The ability of the Forest to provide timber is limited by a number of important factors, including:

- The amount of area on which timber can be managed.
- The amount of standing timber.
- The rate of growth of new timber stands after harvest.

Approximately 64 percent of the Forest's total lands are tentatively suitable for timber production. In compliance with 36 CFR 219.4, the remaining 36 percent of the acres were determined to not be suitable for timber production. Non-forested land includes water, lands developed for purposes other than timber production, and land not stocked with at least 10 percent tree cover. Almost all lands administratively withdrawn were those designated Wilderness. Other unsuitable lands are those identified either as subject to damage to the site during harvest or incapable of successful regeneration of a new timber stand within 5 years.

For more detailed information on this process, see Appendix B and the process paper entitled "Determination of Land Not Suitable For Timber Production," Mt. Hood National Forest, July 1984.

The following table summarizes the changes that lead to the suitable land base for the Forest Plan based on 1988 vegetation inventory.

Table Two-1 Recent Changes in Suitability Land Base

	Timber Management Plan Land Base (M Acres) 1977	Forest Plan Land Base (M Acres) 1990
Total National Forest Acres	1059	1063
Unsuitable for Timber Management	-235	-385
Tentatively Suitable Acres	824	678
Unregulated Acres as 1977 (includes then existing unit plans)	-71	
Subtotal	753	678
Bull Run	-68	Land Allocations -289
Unit Plans[1]	-29	
Acres Available for Timber Management (includes intensive and partial yield lands)	656	389

---

[1] *The 29,000 acres corresponding to current management under the TM Plan pertain to Unit Plan adjustments to the TM Plan since 1977.*

The volume and major species of trees on the 678,000 acres that are tentatively suitable for timber production in this plan are as follows:

Table Two-2 Acres and Volume of Timber by Vegetation Zone

Major Vegetation Zone	Acres (Thousand)	Volume	
		Billion Cubic Feet	Billion Board Feet
Western Hemlock	198	1.68	9.87
Silver fir	307	2.41	13.59
Mt. Hemlock	51	.28	4.20
Grand fir	122	.53	2.97
All Species	678	4.90	30.63

The Western Hemlock Zone consists predominately of fast growing Douglas-fir. Western hemlock can be found on sites that have been left undisturbed and Western red cedar is a frequent occupant of wet sites. The Silver fir Zone supports a variety of conifers. The Mt. Hemlock zone supports many conifers with Mt. Hemlock the most abundant on the west side, sub-alpine fir on the east side. The Grand fir Zone's most common tree is Grand fir. Additional species include Ponderosa pine, Lodgepole pine, Western hemlock and Douglas-fir.

Table Two-3 Timber by Age Class on Tentatively Suitable Forested Lands

Age/Years	Acres (Thousand)	Percent of Tentatively Suitable Lands
0 - 9 Years	1.3	.2
10 - 29 Years	72.8	10.7
30 - 69 Years	59.6	8.8
70 - 119 Years	145.7	21.5
120 - 169	158.1	23.3
170+	240.8	35.5
All Ages	678.0	100%

Although the Forest's supply of mature sawtimber seems relatively abundant, the 1985 Analysis of the Management Situation (AMS) has shown that the levels harvested in recent years cannot be maintained indefinitely (refer to information in Appendix B).

If all of the 678,000 tentatively suitable acres could be managed for maximum timber yield, the highest regulated (green) timber volume sustainable over time would be 68.5 million cubic feet per year (420 MMBF per year) during the first decade.

This level of production is about 9 percent more than the potential production of 383 MMBF scheduled in the current Timber Management Plan.

The Allowable Sale Quantity (ASQ) is composed of two components: (1) chargeable harvest of green trees on suitable land, and (2) chargeable harvest of dead trees on suitable land. Other timber of commercial value could become available in the future but not in assured amounts. Such volume might include, for example, salvage of dead trees on unsuitable land. Total Timber Sale Program Quantity is the sum of chargeable, submerchantable, and "other" timber volume.

Supply of Timber and Projections in the Six County Influence Area

Refer to presentation of projected timber output under the Forest Plan found in Chapter Four. Also refer to the Communities discussion in Chapter III of the accompanying FEIS.

Demand for Timber

Demand can be analyzed in relation to any particular national forest from three points of view: national, regional, and local.

National: The Forest and Rangeland Renewable Resources Planning Act (RPA) requires periodic assessments of the demand for timber along with other resources. Based on the RPA assessment of demand nationally, targets were assigned for individual forest production. The 1980 RPA Target for the Forest was set at 376 MMBF per year through the year 2030. This is close to current total harvest levels. The average total harvest annually from 1979 through 1988 was 369 million board feet.

A RPA Program 1990 has recently been issued. It stresses long-term strategic planning for programs that will emphasize rounding out multiple use management of natural resources and sustaining resource outputs and values for future generations.

Regional: A research bulletin published by the School of Forestry of Oregon State University in 1976 examined the future role of public forest lands in the state's economy as part of an overall estimate of Oregon's ability to produce timber. According to the study, the stability of Oregon's wood-products industry depends to a significant degree on timber supplied by national forests. This report has stimulated demand for increased emphasis on timber management on the Forest.

Local: The Forest supplies timber to a number of sawmills located in small communities in the Forest's areas of influence. Many of these mills depend almost totally on the Forest for their supply of timber. Sustained high interest in bidding for the Forest's timber reflects continuing demand for logs in spite of cloudy long-term forecasts.

Fish

The Existing Situation

The Forest makes major contributions to Northwest supplies of fish, both wild and hatchery-spawned. With its great diversity of aquatic habitats ranging from alpine lakes to reservoirs and backwaters of the Columbia River, the Forest produces 48 known species of fish. The most important of these is the salmon family, called salmonids. These are both resident and anadromous.

The Forest's role in recreational and commercial fish harvests is substantial. Financial values from existing habitats have been estimated at $3 million per year for anadromous fish, and $1 million per year for resident trout.

Supply of Fish

According to estimates developed from current surveys of streams, the Forest has more than 1,600 miles of streams capable of supporting fish. Lakes and reservoirs within the Forest increase its capability by adding between 3,800 and 4,000 acres to the total aquatic habitat.

Six fish hatcheries obtain all or most of their water supplies from the Forest's watersheds On the average, they produce 20 million pounds of anadromous fish per year.

The following table contains estimates of habitat capabilities with a full habitat enhancement program for the Forest's anadromous and resident salmonids. The data assume each major habitat would be fully occupied, and that a total rehabilitation and enhancement program estimated to cost $10 to $20 million would be implemented. Capability, as used here, means an estimate of the number of smolts and legal-size resident trout that could be produced in the waters of the Forest, assuming available habitat to be fully occupied.

Table Two-4 Habitat Types and Capability Potential (With Full Enhancement)

Habitat	Units Miles (Acres)	Species	Units of Measure	Capability of Habitat*
Streams	527	Steelhead	Smolts	813,700
Streams	311	Coho	Smolts	1,163,300
Streams	256	Spring Chinook	Smolts	1,342,700
Streams	5	Fall Chinook	Smolts	227,000
Streams	413	Searun Cutthroat	Smolts	393,700
Streams	1,650	Resident Trout	Legals	756,900
Lakes	(1,500)	Resident Trout	Legals	85,900
Reservoirs	(1,900)	Resident Trout	Legals	196,600

**Mt. Hood National Forest Capability Index (1985) and Legal Trout Capability Index (1985)*

Demand for Fish

Salmonids are a part of life in the Pacific Northwest. From pre-Columbian times to now, these fish have played a significant role in the lives of many different people including Native Americans, sport fishermen, and commercial fishermen.

Of the Forest's developed recreation sites, 85 percent are near water - streams, rivers, lakes, or reservoirs. Angling for trout and other fish is highly popular. Many residents of the Portland-Vancouver metropolitan area are attracted to the Forest's lakes and streams. More and more, access and use of the Forest's aquatic resources are looked upon as a vital component of the area's lifestyle.

The demand for fish from waters of the Pacific Northwest far exceeds the supply. Many people are looking for ways to increase fish production. This is especially true for anadromous species in the Columbia River basin. The Salmon and Steelhead Enhancement Act and the Northwest Power Planning and Conservation Act are recent pieces of legislation. They provide for reducing the restrictions on anadromous runs, and they support efforts to substantially increase natural production of wild fish.

Local demands to fish for resident trout are also large and are likely to increase. Data are limited, but this demand appears roughly equal to the supply of lake/reservoir fishing on the Forest. The opportunity to fish in streams far exceeds demand at this time, and this leaves room for expanded future uses.

If the demand for fishing increases in proportion to the increase in surrounding-area populations, maintaining the balance between demand and supply must include one or more of the following actions:

- Increase habitat capability through enhancement.
- Increase the stocking of planted fish. (This would be the responsibility of Oregon Department of Fish and Wildlife.)
- Enact special regulations. (ODF&W responsibility.)
- Encourage increased uses of less-accessible streams.

Habitat management, capability, and enhancement in this Plan present opportunities for Forest management. However, the administrative management of fisheries (stocking, regulations) is the responsibility of the state of Oregon.

Water

The Existing Situation

Water is one of the Forest's most valuable and extensive renewable resources. Forest water is an economic resource when used for irrigation, fish production, and to meet domestic needs. It also contributes scenic and recreational benefits such as those provided by the numerous waterfalls in the Columbia Gorge. Finally, it makes possible the Forest's timber and vegetative cover, which in turn support the logging industry and wildlife.

Supply of Water

The Forest has five major drainages. The average annual flow of water from the Forest is 5.95 million acre-feet, resulting from an annual precipitation that ranges from about 20 inches per year on the east side to nearly 200 inches per year on Mt. Hood.

Surface water (streams, lakes, springs, wetlands, etc.) on the Forest totals more than 71,000 acres, including 5,000 miles of perennial and intermittent streams. Associated riparian areas total approximately 179,000 acres. Water quality on the Forest is generally excellent with a few local problems. The water has low dissolved mineral content, high levels of dissolved oxygen, and is cool and clear.

Methods of increasing the yields of water through management practices have been studied throughout the United States. However, the research has yet to show that supplies of water increased through management techniques can be delivered to users beyond the small watershed and transported via the natural stream network to a point of diversion. Due to natural variations in streamflow and water flowing from the larger watershed absorbing the smaller watershed, any increase in water quantity loses its identity. Efforts to increase water yields on the Forest are not anticipated.

Demand for Water

The value of water from the Forest for domestic uses has been placed as high as $24 million per year. It may be one of the most important resources the Forest supplies to its surrounding communities.

There are over 15 municipal watersheds on the Forest. Some, like The Bull Run Watershed and The Dalles, are well known. The Bull Run Watershed provides the Portland metropolitan area with more than 130,000 acre-feet of water per year. (For convenience, water quantities are quoted in acre-feet; one acre-foot is one acre of land covered with water one foot deep.) Dodson, a small community, uses less than three acre-feet of water per year. The Dalles Watershed consumes 6,000 acre-feet per year. The total water consumption of surrounding communities exceeds 165,000 acre-feet per year.

Irrigation is important to many farmers in Hood River and Wasco counties. As a general rule, through Water-Master authority, irrigators will get all of the water they need. However, supply and demand imbalances may occur in dry growing seasons and when winter precipitation falls far below normal. In Wasco County, water from the Forest irrigates about 43,000 acres. This benefit has been valued at nearly $390,000 per year.

The high demand for fish was reviewed earlier. One obvious fact is that large and continuing supplies of cool, high-quality water are needed to continue or expand resources that sustain salmon/steelhead, resident trout, and freshwater shellfish. While the demand for water is expected to increase as the area's population increases, no serious water shortage is likely to happen in the near future.

Wildlife

The Existing Situation and Agency Coordination

Approximately 265 terrestrial vertebrate species of animals spend at least part of their lives on the Forest. They use a variety of habitats that are highly diversified. The east side of the forest has types of habitats and species of animals unique to its relatively dry environment. Other types of habitats and animal species are unique to the west side. The age of trees in the Forest affects habitat diversity.

Officials of the Forest cooperate with the Oregon Department of Fish and Wildlife (ODF&W) in managing wildlife within the Forest. The working arrangement is for ODF&W to manage wildlife numbers while the Forest manages the habitats.

Supply of Wildlife

A forest with a diversity of vegetative conditions, is considered optimum. The relative amount of various types of habitats on the Forest are compared in the following table.

Table Two-5 Vegetative Condition by Age Class All Forested Lands

Age Class	Acres
Forb/Pioneer/Shrub 0-9	1,300
Sapling/Pole 10-29	79,000
Small Sawlog 30-69	68,000
Late Successional 70-119	201,000
Mature 120-169	247,000
Over-mature 170+	351,000

Old growth can be defined in many ways. The Forest has approximately 351,000 acres of standing vegetation 170 years and older. About 87,000 acres of this is considered unsuitable for timber harvest. Another 95,000 of it has been allocated to land management prescriptions which do not allow scheduled timber harvest as part of the ongoing timber program.

The grass/forb and shrub-dominated stages of forest growth provide grazing and browsing animals with large quantities of forage. At the same time, this class of wildlife requires mature and old growth for hiding and protection from harsh weather. Other species of wildlife also require mature and old-growth communities for food and cover.

The Forest provides a number of special wildlife habitats that contribute to the diversity of animal species:

- Pine/oak habitat in the ponderosa pine zone runs as a discontinuous band along the dry, eastern edge of the mixed conifer forest on the east side.
- Snags and downed woody material resulting from the growth and death cycles of trees provide habitat for a number of birds and small mammals.
- Riparian habitats are used by more species of animals than any other special habitat. No doubt this is explained by the abundance of food, water, and cover in these habitats.
- Other habitats include the basalt cliffs of the Columbia Gorge (and cliffs and rims in other areas), talus slopes, and caves and burrows.

Three Federally listed threatened or endangered species are present on the Forest. The peregrine falcon, an endangered species, nests in the Columbia Gorge. The bald eagle, a threatened species, is a sporadic winter migrant. The spotted owl is also present on the Forest. This species is Federally listed as Threatened. Eleven candidate plant species, six candidate animals, two candidate fish, and six candidate invertebrates occur or are suspected to occur on the Forest.

Management Indicator species are species that represent other species and require special wildlife considerations on the Forest. These species presumably identify the habitat needs of other species because they have similar biological traits. Table Two-6 summarizes the indicator species on the Forest at this time.

Table Two-6 Forest's Indicator Species

Species	Comments	Habitat Type	Description
Elk	Economically important	Grass/forb Shrub/sapling Mature/old growth	Numbers and condition improving
Deer	Economically important	Grass/forb Seedling/sapling	Numbers/habitat condition improving
Pileated Woodpecker	Requires snag and down material	Mature, old growth, slash snags	Numbers/habitat condition declining
Pine Marten	Requires old growth	Mature and old growth	Numbers/habitat condition declining
Spotted Owl	Federally listed as threatened	Mature and old growth	Numbers/habitat condition declining
Silver gray squirrel	Hunted, associated with pine/oak habitat	Pine/oak (East side)	Numbers/habitat condition declining
Merriam's turkey	Hunted, associated with pine/oak habitat	Pine/oak (East side)	Numbers/habitat condition declining

Demand for Wildlife

Present indications are for an increased demand for wildlife habitat protection. The mere presence of wildlife is a source of satisfaction for many people. The presence of endangered species is of particular importance to many. The demand for observable wildlife exceeds the demand for hunting.

Wildlife management requirements have been established by Forest Service regulations. These regulations direct that habitats for all existing native and desired non-native species of plants, fish, and wildlife must be managed to maintain minimum, viable populations of such species. Populations should have enough individuals to assure genetic diversity. Existing diversity is to be maintained or improved.

These minimum habitat levels translate into providing habitat for at least 66 pairs of spotted owls, 96 pairs of pileated woodpeckers, and 231 pairs of pine martens.

If the demand for watchable and huntable wildlife continues to grow, additional efforts will be needed to improve the supply of wildlife. Needs include:

- Increases in habitat capability to produce wildlife.
- Enactment of special regulations (ODF&W responsibility).
- Encouraging road closures.
- Providing increased opportunities for wildlife observation throughout the Forest.

Recreation

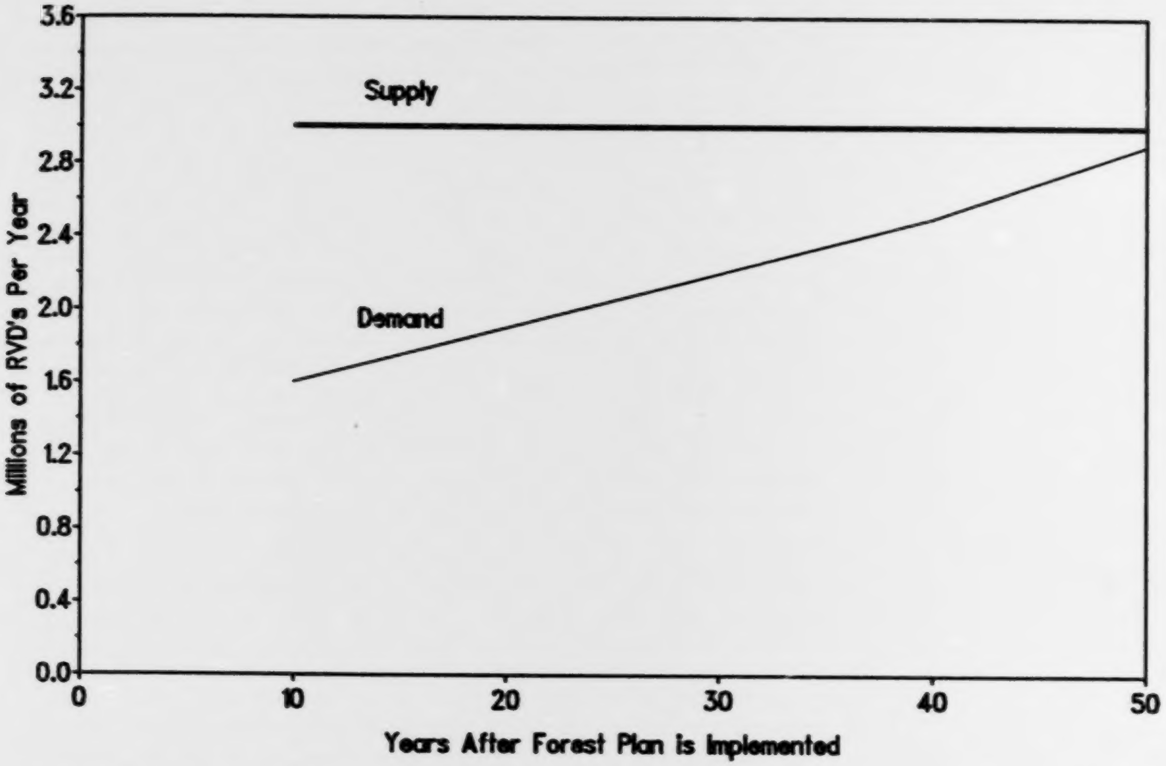
A young angler watches his line.

Developed Recreation

A total of 152 developed sites on the Forest have a practical capacity of more than three million RVDs per year. These sites include campgrounds, picnic grounds, boating facilities, visitor information centers, winter recreation areas, organizational camps, and summer homes. Approximately 1.5 million RVDs of recreation within developed sites were recorded for the year 1983.

A total of 589 facilities, with an estimated capacity of more than two million RVDs, are privately operated on the Forest under Special Use Permits. Some of these facilities are available for public uses. Others operate for the benefit of individuals or members of various groups.

Figure Two-1 Supply Vs Demand: Developed Recreation



Data: Supply = 3.0 MM RVDs Per Year (capacity under the Forest Plan to meet demand); Demand (Use) = 1.6 MM RVDs (Year 10), 1.9 (Year 20), 2.2 (Year 30), 2.5 (Year 40), 2.9 (Year 50)

The above figure shows that the existing quantity of developed RVDs will be supplied for the next fifty years and is sufficient to meet demand. This figure fails to show the differences in supply and demand for specific activity types. For example, the Oregon Statewide Outdoor Recreation Plan (SCORP) and 1987 Pacific Northwest Demand Survey indicate shortfalls in supply for facilities such as boat ramps and interpretive opportunities. These types of specific shortfalls in supply will be addressed in the Resource Summaries and Implementation Schedules which identify specific projects for the next decade. This figure also fails to show that the quality of the average developed site has been and is now deteriorating because of a lack of funding to do what is termed "heavy maintenance." If this continues, a quality of facilities which the Forest has defined as "minimum level" will ensue. This condition would be less than the Forest Service's "Low Standard" of service and would probably lead to closing areas before they became hazards to public health and safety. This will not be allowed to happen under the Forest Plan. Instead, all types of recreational facilities and services will be upgraded and maintained at the higher level ("standard", according to Forest Service definitions).

Forecasts for demand are based on predictions in the State of Oregon's 1987 Demand Survey. This survey identifies actual user preferences and use patterns.

Although the overall capability of the Forest to supply developed recreational opportunities exceeds demand, the use of many individual developed sites on the Forest at this time equals or exceeds their practical recreation capacity. The Forest has been able to manage most sites to meet increased demands for developed recreation, but the costs are high. Recreational use of a site beyond its practical capacity can cause deterioration of the site. Rehabilitation then becomes necessary. When demand greatly exceeds practical capacity, a site must be expanded, or its use must be limited.

According to 1980 Recreation Information Management (RIM) estimates, the total demand for developed recreation on the Forest, including both Forest-operated and privately-operated facilities, has reached 48 percent of total capacity. Demand is projected to reach 94 percent of capacity by the year 2040. Demand for developed sites managed by the Forest has been projected to exceed capacity in 50 years. Demand for privately-owned developed sites is scheduled to reach only 78 percent of capacity in 50 years. The projected shortages of capacity in facilities managed by the Forest is aggravated by the uneven distribution of demand throughout the year. Some popular developed sites such as Lost Lake, Trillium Lake, the Timothy Lake area, and the Clackamas River drainage are often overcrowded during summer weekends and holidays. The especially heavy use of Timberline Lodge and Multnomah Falls also adds to the unbalanced distribution of demand.

Dispersed Recreation

Dispersed recreation includes both motorized and non-motorized semi-primitive recreation opportunities. There are approximately 1,300 miles of trails, including cross-country ski trails. More than 118,000 acres of unroaded areas in 11 different locations provide opportunities for semi-primitive, dispersed recreation. The most popular dispersed recreation activities on the Forest are driving for pleasure, viewing scenery, cross-country skiing, and hiking. The supply/demand situation regarding the four types of non-wilderness, dispersed recreation is portrayed on the following two pages.

Surpluses: It is evident that all alternatives meet demand for roaded modified dispersed recreation for the next fifty years. All alternatives, except B and C, also meet demand for roaded natural dispersed recreation for the next fifty years.

Deficits: The current supply of both types of semi-primitive recreation opportunities is short of demand, especially in the semi-primitive motorized category. This deficit increases over time for all alternatives, but at different rates.

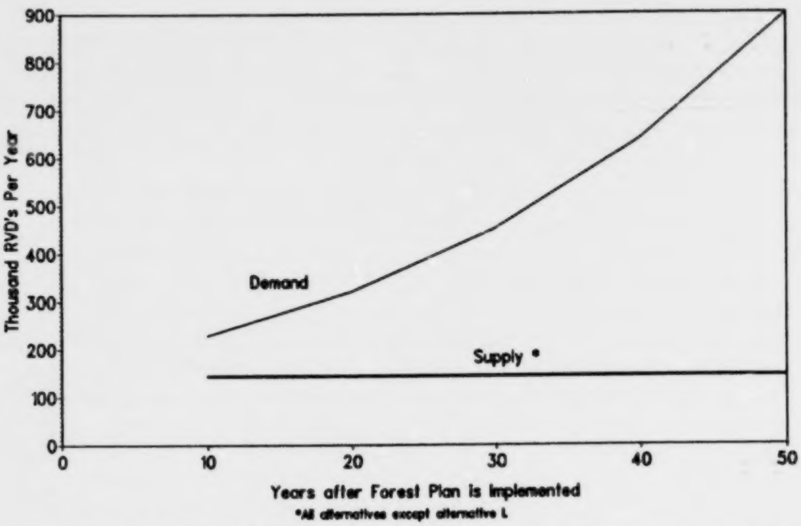
The quality of the average dispersed recreation campsites, trailhead, or trail has been and is now deteriorating because of a lack of funding. The Forest Plan addresses this situation by upgrading and maintaining all dispersed recreation facilities and services to the standard service level.

Table Two-7 Recreation Visitor Days (According to Activity)
(Fiscal Year 1986)

Activity	RVD
Driving for Pleasure	860,100
Camping	819,200
Viewing Scenery	614,500
Gathering Forest Products	279,800
Downhill Skiing	275,000
Hiking and Walking	316,700
Fishing	148,100
Resort Use	136,000
Bus Touring	150,200
Cross-Country Skiing	98,500
Recreational Cabins	130,600
Hunting	87,900
Picnicking	74,800
Motorcycle/Scooter Use	66,800
Nature Study	54,700
Canoeing, Other Small Watercraft Use	41,900
Using Interpretive Programs	42,700
Snowmobiling	36,100
Horseback Riding	26,300
Snowplay	25,000
Swimming and Water Play	44,400
Power Boating	25,000
Total RVDs	4,353,100

Source: 1986 Recreation Information Mangement (RIM) Estimates, Report 2300-1. According to the 1986 estimates of activity, more than half of the total use of the Forest's resources for recreation were in three categories: driving for pleasure, camping, and viewing the scenery.

Figure Two-2 Supply Vs Demand: Wilderness Recreation



Data: Supply = 144,000 RVDs Per Year (capacity under the Forest Plan to meet demand); Demand = 228,000 RVDs (Year 10), 321,000 (Year 20), 452,000 (Year 30), 638,000 (Year 40), 899,000 (Year 50)

Wilderness Recreation

Figure Two-2 shows that the existing quantity of Wilderness RVDs demanded by the public cannot be met by any of the alternatives considered in detail. This demand/supply deficit increases in the future. The 1984 Oregon Wilderness Act states, *"The Department of Agriculture shall not be required to review the wilderness option prior to the resolution of the plans, but shall review the wilderness options when plans are revised. . ."* The exceptions are lands remaining in *"further planning status,"* such as the Rare II Olallie area. The Forest Plan does not include the unroaded portion of the Olallie Area as wilderness. Even if it did, the extra 7,000 RVDs per year is not nearly enough to make up the deficit in the supply of wilderness opportunities.

The quality of the average Wilderness campsite, trailheads, or trail has been and is now deteriorating because of a lack of funding. The Forest Plan requires that this quality be changed to the standard service level.

Visual Resources

Scenic Quality Conditions

With more than a million acres in the heart of the Cascade Mountains, the Forest is a rugged and diverse landscape, offering a wide variety of scenic attractions. Scenery is recognized as a basic resource of the land which provides aesthetic benefits to the public. However, it is one resource which is not "consumed" in a traditional sense. No matter how many people view a scene, it is still there for the next person.

Before the beginning of this century, landscapes of the Forest were nearly 100 percent in their natural condition, but very few people ever viewed those scenes. A few roads were constructed for recreational purposes in the 1880s and early 1900s The Larch Mountain Road was built as a scenic drive in 1939.

As development proceeded to provide access to timber and recreational sites, the natural character of the landscape was no doubt altered somewhat. High quality scenery was in such abundance in the early days that long-term management of it was not an issue. After World War II, the Forest Service responded to the needs of a growing industrial society. This involved building more roads, trails, campgrounds, hydroelectric dams and powerlines, as well as increased timber harvesting.

Although the landscape was further altered, the changes increased the public's opportunities to travel the Forest and view the scenery. By the mid 1960s forest managers were well aware of the public concern for scenic values, and had designated Landscape Management Zones along major travel routes.

Visual Management System

The Forest Service has established the Visual Management System (VMS) for managing visual resources. It classifies landscapes according to their natural variety and public sensitivity. The VMS inventory process results in all forest lands having a recommended Visual Quality Objective.

Inventories and records of the quantity and qualities of visual resources were begun in 1973, and revised in 1983.

Variety Class: The inventory of the variety in the landscape provides the amount of unique, common, and minimal landscape variety in the Forest, using established criteria for the landforms, rock forms, water forms, and vegetation present.

Table Two-8 Variety Class Inventory (1973)

Class	Definition	Acres (Thousand)	Percent
A	Unique or outstanding	273	25
B	Common to the character type, but not outstanding	660	60
C	Minimal variety	169	15
		1,102*	100%

** 1,102 includes private land inside Forest boundary.*

Demand for Scenic Quality

One of the basic premises of the Visual Management System is that most recreation-oriented visitors to the National Forests have an image of what they expect to see. Although studies of people's images of forest areas result in varied responses from one geographic region to another, one factor generally remains constant- *"people expect to see a naturally appearing character within each general region."*[1]

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[1] Newby, Floyd, Environmental Impact Appraisal of proposed developments in the Harney Peak Area of the Black Hills, Pacific Southwest Forest and Range Experiment Station, USDA Forest Service, Berkeley, CA.

Demand varies by locality, the number of viewers, and the kinds of activities or purpose of the visit. Driving for pleasure and viewing the scenery are two of the most popular activities, accounting for one-third of the total recreation use of the Forest in 1983.

Yet there are wide variations in the amount of recreational uses on the many roads, trails, and water bodies on the Forest. This variation is accounted for in the Visual Resource Inventory factor of Sensitivity Levels, which reflects the public's concern (or demand) for scenic quality.

Table Two-9 Sensitivity Levels

Level	Definition	Acres (Thousand)	Percent
1	High (≥ 6 concerned viewing hours per day)	534[2]	48
2	Average (2-6 concerned viewing hours per mile per day)	218	20
3	Low (less than 2 concerned viewing hours per mile)	350	32
		1,102	100%

[2] *Includes 191,000 acres of Wilderness and Research Natural Areas*

Inventoried and Forest Plan Visual Quality Objectives

The two inventory factors of Variety Class and Sensitivity Levels were combined in the Visual Resource Inventory process to determine the Recommended Visual Quality Objectives. These are representative of the public demand for the visual resource, and are intended to provide guidance for the management of the Forest's scenery. The Visual Quality Objectives describe five different degrees of acceptable alteration of the natural landscape.

In the land management planning process, trade-offs are made among many resources. This results in the selection of Visual Quality Objectives for each management area in the Forest Plan Standards and Guidelines.

Table Two-10 Forest Plan Visual Quality Objectives

Visual Quality Objective	Inventoried	Proposed Action Percent of Forest
Preservation	17	18 (Wilderness & RNA)
Retention	11	11
Partial Retention	25	26
Modification	38	45
Maximum Modification	9	0
	100	100

Communities And Urban Interface

A family learns to bait their hooks at fishing clinic.

The Existing Situation

The Forest is not only a part of the Northwest's natural environment, but it also contributes to the social and economic environment of its area of influence. Many people who live in the vicinity of the Forest use it for work, for play, or for both. In one way or another, the Forest affects the lives of a large segment of the nearby population and affects other, more distant people to a lesser degree. The needs and interests of all concerned citizens are major factors in Forest management decisions.

The primary zone of influence is the geographic area where the social, economic, and/or environmental condition is significantly affected by changes in Forest resource production or management. The primary zone of influence extends well beyond the boundaries of the Forest. The Mt. Hood National Forest has two zones of influence. The primary zone of influence includes all or portions of Multnomah, Washington, Yamhill, Clackamas, Hood River, and Wasco Counties. A secondary zone of influence includes those areas where people may have some concern for the Forest, but do not use it or depend on it to the extent of the people in the primary zone of influence.

The six-county area adjacent to the Forest contains a combined population of 1,254,315 people, representing almost half of Oregon's total population. This area includes the largest city in Oregon, Portland. The Portland metropolitan area is a center of trade and manufacturing. The proximity of the metropolitan area is a dominant feature of the social and economic setting in which the Forest must operate.

A major element in the Forest's planning is projected population growth in the area of influence. The entire area is expected to increase in population with the largest increases projected for Clackamas County. This county is expected to increase by about 50 percent by the year 2000 largely due to expansion in the Portland metropolitan area.

Residents of the six-county area near the Forest take strong positions regarding its facilities and services. Many urban residents look upon the Forest as a kind of "backyard" for Portland. Many rural residents feel a sense of ownership of the Forest, and some literally depend upon its resources. The spectrum of individual needs and desires, the intensity of those needs and desires, and the Forest's nearness to a very large urban area sometimes create complex and even contradictory concerns.

Economic Dependency

Small towns in the six-county area have historically relied on wood products and agriculture as their base of employment. This historic dependence has followed a pattern established in the early 20th century and still affects those small towns today. Economic growth has been rapid but cyclical, with peaks and valleys in production. Harvesting of timber accelerated rapidly during World War II and again during the boom years of the sixties and seventies.

In recent years, however, employment in wood products has declined. Throughout the country, high interest rates caused a sharp drop in the demand for wood products as fewer people were able to buy new homes. Competition from Canadian and Southeastern U. S. producers reduced the demand for wood products from the Pacific Northwest. Mechanization of sawmills caused a decline in the need for labor in the wood products industries. (For more information, see Adams, D., Haynes, R. "Changing Perspectives on the Outlook for Lumber in the United States," in the Journal of Forestry 1985.)

In early 1990 approximately 8,600 people were directly employed in wood products industries in the six-county area. In some parts of the six-county area, especially on the west side of Portland, tourism, trade, and "high tech" industries are increasing as wood-products employment declines. The influence of the Forest on local economies is an aspect of various human concerns discussed elsewhere in this plan.

Amenity Benefits

The nearness of the Forest to Portland creates a strong demand for recreation of all kinds, and the demand is expected to increase. The boundary of the Forest is less than an hour's drive via several major highways from the metropolitan area. Because the Forest is so close and readily accessible, it is very popular for one day visits from Portland. These urban visitors are highly concerned about the visual appearance of the Forest. At the same time, the Forest's attraction for users who are not "Forest oriented" creates special problems in law enforcement and management.

Summary of Supply and Demand Projections

Table Two-11 Summarizes the potential outputs of the major resources of the Forest. Additional information is provided in Appendix B and Chapter II of the DEIS and in the "Analysis of the Management Situation, Mt. Hood National Forest, March 1985."

Information Needs

This section lists the information, inventory and research needs that have been identified for the Mt. Hood National Forest. This recognizes gaps in data or scientific knowledge that would be desirable to fill prior to preparation of the next Mt. Hood National Forest Land and Resource Management Plan. The concept used to organize and develop these needs recognizes that biological, physical and social ecosystems are the foundation for the planning process.

Of the many ecosystems found in wildlands, several were identified as having particular current importance in forest planning. Old growth, riparian/aquatic and upper slope ecosystems are examples where more information would be desirable to test planning assumptions as future plans are developed. Human visitors in the forest are an integral part of these ecosystems. People's needs and expectations from the forest should be considered in forest planning.

Timber

- Validation of yield tables; managed stand growth.
- Evaluate supply/demand relationships and wood quality goals.
- Compare types of treatments and corresponding volumes from "Category B" management areas.
- Develop effective techniques for reforesting areas with harsh climates, steep terrains, and/or competing vegetation.
- Evaluate the cumulative effects on soil productivity by ground-based timber harvest equipment under uneven-age management strategies.
- Evaluate the effects of planting genetically selected stock on stand growth and yield, pathogen and insect population dynamics, forage nutritional quality for wildlife, etc.
- Determine the results of alternative timber management strategies on wood product properties, net value recovery, and the competitiveness of the timber industry in national and international markets.

Table Two-11 Summary of Projected Supply and Anticipated Demand

	Units	First Decade	Second Decade	Third Decade	Fourth Decade	Fifth Decade
Semi-Primitive Recreation[1]						
No Action[2]	MRVDs	200	200	200	200	200
Production Potential[3]	MRVDs	347	347	347	347	347
Forest Plan	MRVDs	275	275	275	275	275
Anticipated Demand[4]	MRVDs	512	722	919	1,296	2,023
Wilderness Capacity						
No Action	MRVDs	144	144	144	144	144
Production Potential[5]	MRVDs	151	151	151	151	151
Forest Plan		144	144	144	144	144
Anticipated Demand		228	321	452	638	899
Developed Recreation		3,000	3,000	3,000	3,000	3,000
No Action	MRVDs	3,000	3,000	3,000	3,000	3,000
Production Potential	MRVDs	3,000	3,000	3,000	3,000	3,000
Forest Plan	MRVDs	3,000	3,000	3,000	3,000	3,000
Anticipated Demand	MRVDs	1,600	1,900	2,200	2,500	2,900
Anadromous Fish						
No Action	Pounds of Fish (Thousands)	491	491	491	491	491
Production Potential[5]		491	610	650	690	730
Forest Plan		491	515	535	555	575
Anticipated Demand						
Potential Old Growth including in-growth						
No Action	M Acres	312.7	356.1			443.7
Production Potential[6]		330.2	392.8			523.3
Forest Plan		320.6	373.3			475.1
Anticipated Demand		N/A	N/A	N/A	N/A	N/A
Existing Old Growth						
No Action	M Acres	312.7	281.8			225.0
Production Potential[6]		330.2	318.5			290.1
Forest Plan		320.8	299.7			254.6
Anticipated Demand	N/A	N/A	N/A	N/A	N/A	N/A
Spotted Owl						
No Action	Number of Pairs	166	157	144	135	124
Production Potential - Alt H		175	171	166	162	160
Forest Plan		173	164	157	151	144

	Units	First Decade	Second Decade	Third Decade	Fourth Decade	Fifth Decade
Deer/Elk						
No Action	Number of Animals (Thousands)	22.3	17.2	20.5	17.8	18.2
Production Potential - Alt I		35.5	33.5	35.5	36.2	38.6
Forest Plan		35.5	33.5	35.5	34.9	35.5
Anticipated Demand		High	High	High	High	High
Timber						
No Action	Volume Offered ASQ, 38.9	38.9	38.9	38.9	38.9	
Production Potential[7]	MMCF	48.8	48.8	48.8	48.8	48.8
Forest Plan	Annual	31.9	31.9	31.9	31.9	31.9
Anticipated Demand						
Water						
No Action	Thousand Acre/Feet	5,446	5,446	5,446	5,446	5,446
Production Potential		5,446	5,446	5,446	5,446	5,446
Forest Plan		5,446	5,446	5,446	5,446	5,446
Anticipated Demand[8]		208	208	208	208	208

[1] *Non-wilderness (includes motorized and nonmotorized)*

[2] *Alternative A*

[3] *Alternative F*

[4] *Table II-19 FEIS*

[5] *Alternative I*

[6] *Alternative H Max Amenity*

[7] *Benchmark 7 with MR's, Max Timber*

[8] *Combined estimates for domestic and agricultural uses*

Water, Fish, Riparian

- Improved basin and species specific information on anadromous fish and resident trout including:
  - Anadromous fish run size, composition and timing.
  - Distribution and extent of spawning and rearing by species.
  - Habitat requirements and survival rates by species and life history stage.
  - Relationship between juvenile densities and smolt/adult production.
  - Character and extent of competition for rearing space between anadromous species, between resident trout species, and between both species.

- Assessments for Forest riparian and aquatic habitats. This includes 60-90 miles of anadromous streams, 400-600 miles of resident trout streams, 400-600 miles of perennial non-fish bearing streams, and nearly all lakes and wetlands.
- Definition and understanding of the relationship(s) between riparian and aquatic habitat parameters and fisheries' carrying capacity. This includes methods for quantitative assessment, as well as the capability to predict fish production potential.
- Validation of modeling techniques to relate the effects (individual and cumulative) of various land and resource management activities on the productive capability of riparian and aquatic ecosystems.
- Hierarchical classification of Forest riparian and aquatic ecosystems.
- Quantitative, multi-year costs, performance efficiency, and durability of a wide range of riparian and aquatic rehabilitation and enhancement techniques.
- Identification of information and research requirements which are needed to improve management of the Bull Run Watershed. (NOTE: On May 19, 1986 the Bull Run Information Needs Committee was appointed to develop this information. The Committee is to report their findings along with recommended priorities.)

A young black bear cub frolics in a meadow.

Wildlife

- Biological requirements of indicator species.
- Use patterns of Winter Range areas.
- Old growth habitat characteristics (structure/function).
- Quantity/quality of large down woody material needed for wildlife.
- Longevity of standing snags by species, diameter, and height.
- Spotted Owl habitat requirements (e.g. amount of contiguous old growth habitat).

- Legume and/or grass seeding of clearcuts effect on forage production/utilization by deer and elk, and the effect on conifer survival (i.e. competition with conifer by resulting plant community).
- Threatened, endangered and sensitive species Forest occupancy information.
- Fragmentation effects and fragmentation threshold values.
- Riparian wildlife use - possible indicator species for riparian conditions.
- Information need for T & E species with no recovery plan.
- Wildlife inventory needs on nonregulated harvest lands.

Recreation

- Current and future use information for developed, dispersed, and wilderness recreation activities.
- A refined process to set priorities for developed sites. This ranking would allow efficient allocation of operations, maintenance, and capital investment funds, and respond to changing use preferences and activity growth rates.
- Methods and effects associated with controlling use of recreation areas (e.g. reservation system, lottery, market solution, public information).
- Information on the relationships of roads, timber harvest and recreation. For example, what would be the effect on recreationists if a percentage of secondary roads were closed?
- Market surveys to identify recreationists' preferences, needs and expectations, and identify potential recreationists.
- Studies to identify and evaluate interactions between recreation use of all types and specific fish and wildlife species and habitats.
- Identify the relationship between what types of settings recreationists use and what types they prefer.
- Identify effective educational, informational, and interpretive techniques in managing recreation, fish, and wildlife interactions.
- What are the most effective methods for monitoring interactions between recreation, fish, and wildlife?
- What percentage does trail associated recreation contribute to the cumulative effects of timber management, mining, grazing, urbanization, and a growing human population on the overall reduction of fish and wildlife habitat?
- Measure and predict the effect of changes to wildland landscapes on recreational values, both in economic and social terms.
- Determine the practical maximum capacity for use of specific wilderness areas or other recreation settings.
- How can "people habitats" best be defined?

Visual Resources

- Information on forecasting the future visual condition of viewsheds.
- Appropriate methods for monitoring visual resources.
- Specific information on recreationists' attitudes and perceptions regarding modification of the visual landscapes and the resultant recreation experience.
- Information on the application of uneven age silviculture practices in the Western hemlock vegetative type.

Cultural Resources

- Pursue scholarly research (data collection, synthesis, analysis and interpretation) necessary to develop "Historic Contexts" represented on the Forest-based cultural themes with geographical and chronological limits. Frame research questions to identify the range of cultural resource property types possible on the Forest, the resources utilized, the context of the occupation/exploitation and how each has contributed to the forest of today.
- Using the data available, develop predictive models that will address where the property types for each "Historical Context" are likely to be found and how extensively they should be represented.
- Frame research questions for each historic context that will assist/enhance the understanding of the resources and their potential for interpretation/enhancement.
- Utilize the data base, results of research and the knowledge of the needs of the scientific community to determine the type and number of sites and site types that should be conserved for data recovery.
- Develop preservation goals for each "Historic Context" integrated into a single preservation plan. Use this plan as a framework in which to conduct inventories, evaluations, nominations to the National Register of Historic Places, protection and enhancement of the Forest's cultural resources.
- In cooperation with the American Indians, identify the specific resources or locations within the Forest that are traditional use areas, or have religious significance to Indian people.

Soils

- Erosion rates on major soil parent materials in an undisturbed state and after logging disturbance.
- Erosion rates and recovery rates on road cut slopes for different parent materials.
- Losses in productivity related to soil compaction or tractor harvested and machine piled units.
- Nutrient levels in the different soil types and vegetation communities on the Forest.
- Impacts of site preparation methods of machine piling and broadcast burning on nutrient cycling. Effects will differ by east side, west side, and high elevation plant communities.
- Fertilizer response of Douglas-fir on different soil types. Balance effect of nitrogen and phosphorous on fertilizer response.
- Effectiveness of measures used to mitigate compaction damage. Effectiveness of subsoil tillage in rehabilitation of compacted soil.
- Detailed soil inventory of the commercial forest land base and municipal watersheds to aid in watershed management, identification of unsuitable ground, and assistance in project level planning.
- An evaluation of the cumulative impacts of multiple entry and intensive management prescriptions on compaction-produced productivity losses.

Forage

- Production information for transitory forest types, both inside and outside existing allotments.
- Vegetation typing and forage production information for existing allotments.

Fire and Fuels

- Effects of wildfires on non-timber values and usage of Forest resources.
- Detailed documentation of fuel profiles on the Forest.

Transportation

- Effects of roads on the physical environment.
- Effects of roads on fish and wildlife.
- Effects of roads on recreational use.
- Site-specific information to evaluate possible effects of new roads on the adjoining physical environment.
- Methods and processes to evaluate, display, and account for the benefits of roads to all resources.
- Data regarding alternative methods of road financing.
- Effectiveness of mitigation measures to preserve water quality in roaded drainages including sediment control.

Tandem bikers and dog enjoy a sunny stroll.

Geological

- Studies of ground water quality and quantity.
- Engineering properties of soils in relation to the soil resource inventory.
- Studies of root strength as it relates to land stability.
- Inventory of all landslides on Forest.
- Studies on earthflows, their response to resource activity, i.e. road building, drilling geothermal wells, timber harvest.
- Geologic Resource Inventory - map of geology including structure of the Mt. Hood National Forest, potential for mineral development and slope failure.

Chapter 3

Response to Public Issues

Chapter 3

Response to Public Issues

Introduction

This chapter addresses how the Forest Plan responds to the public issues related to the management of the Forest. These issues are the twelve individual issues listed in Chapter I of the accompanying FEIS. Detailed discussion of these public issues is presented in Chapter I and Appendix A of the FEIS.

Public Issues

☐ Level of Timber Supply on the Mt. Hood National Forest
☐ Community Stability and Livability
☐ Maintenance and Distribution of Old Growth
☐ Viable Populations of Spotted Owls and Management Indicator Species
☐ Conflicts Between Management Activities and Competing Recreational Activities
☐ Maintenance and Enhancement of Scenic Quality
☐ Disposition of the Remaining Roadless Areas
☐ Diminishing Supply, or Availability, of Resources Traditionally Used in Native American Religious and Cultural Life
☐ Maintenance and Rehabilitation of Fish Habitat and Water Quality
☐ The Supply of Developed Recreation Site Opportunities
☐ Wild, Scenic, and Recreational Rivers
☐ Big Game Management

Response to Public Issues

Planning Questions

The public issues listed above were combined into six planning questions.

Question 1: Timber

How much wood fiber should the Forest produce?

Question 2: Riparian

To what extent should riparian habitat be maintained or enhanced?

Question 3: Wildlife

How much and what kinds of wildlife habitat should the Forest provide?

Question 4: Recreation

How should the Forest manage its outdoor recreation resources to respond to the needs of an increasing nearby population?

Question 5: Unroaded Areas

How should the remaining unroaded areas be managed?

Question 6: Communities

How should the Forest respond to the social and economic concerns of local communities depending on the Forest?

The remainder of this Chapter describes how this Forest Plan responds to or answers these planning questions.

Old growth.

Response to Planning Questions

The Forest Plan response to these planning questions is presented below.

Question 1: Timber

How much wood fiber should the Forest produce?

From 1979 through 1988 the average total timber harvest on the Forest was about 369 million board feet per year. This was accomplished on a land base of about 656,000 acres.

Under this Plan, a total of about 189 million board feet is available for annual harvesting on about 389,000 acres. The total including nonchargeable volume is 215 MMBF. About 2,940 acres per year are to be harvested during the first decade. Although harvest volume remains constant over time, timber inventory and growth do not. The initial rate of growth for the standing volume is estimated at 23.6 million cubic feet (MMCF) per year, and the final rate is estimated at 29.5 million cubic feet per year. (These rates show that timber stands subject to harvest begin with more older, slower growing trees than they end with.) This Plan schedules timber harvest on approximately 57% of the lands identified as tentatively suitable for timber production.

Question 2: Riparian

To what extent should riparian habitat be maintained or enhanced?

Water is one of the Forest's most valuable and extensive renewable resources. Approximately 40 percent of Oregon residents rely on the Forest for water in some manner. Water on the Forest is impacted by almost every resource activity and has an important role in almost every resource. Generally speaking, water quality on the Forest is excellent at the higher elevations, but ranges to somewhat lower quality at lower elevations. The range of water quality levels closely follows the degree of past management activities and the resultant current condition of riparian vegetation. Water quality and fish habitat enhancement are responsive to management activities and the management direction that guides activities.

Riparian-dependent resource management under the Forest Plan is at the "moderate" level. Management Requirements (MRs) are satisfied through management of "Key" riparian areas as Key Site Riparian Management Areas, and management of riparian areas associated with Class I, II, III, and IV streams, lakes, reservoirs, and wetlands as General Riparian Management Areas. In addition, portions of 18 watersheds totaling approximately 78,600 acres have been designated as Special Emphasis Watershed Management Areas because of high value beneficial uses or inherent watershed sensitivity.

Approximately 200,650 acres are specifically identified under this Plan for management of riparian dependent resources not including the Bull Run Management Unit. An additional 57,000 acres of riparian areas occur within Category A allocations, such as Wilderness. Fish habitat will show a modest increase through rehabilitation and enhancement. Net long-term increases in aquatic habitat capability will result. The Forest's backlog of rehabilitation projects is planned to be eliminated by the second decade. The existing character of riparian areas associated with perennial streams, lakes, reservoirs, and wetlands is maintained.

Question 3: Wildlife

How much and what kinds of wildlife habitat should the Forest provide?

Under the Plan, sufficient habitat is provided to maintain viable populations of species. Management activities take into account wildlife distribution needs. Habitat is managed for spotted owls, pileated woodpeckers, and pine martens through management area designations and accompanying prescriptions of wildlife resource activities. In addition to areas especially maintained for wildlife, other, comparable habitat may be provided as a by-product of managing other resources. Spotted owl habitat after 50 years, compared to the amount of this habitat now available, will be reduced by 20%.

Forage for deer and elk is provided as timber is harvested. Habitat for these species is enhanced by seeding of grasses and forbs. A planned evenflow of forage should occur at subdrainages for the first 50 years. The Forest's capacity for deer and elk will increase from present levels. Populations of deer and elk are projected to increase by about 5,000 animals by the year 2040.

There are twenty-two thousand acres managed for turkey and squirrels of which twelve thousand is managed under the Pine/Oak Management Area (B4) standard. This will benefit turkeys and silver gray squirrels, and would result in an increase in turkeys and silver gray squirrels (refer to Pine/Oak Management Area Standards in Chapter Four of this proposed Forest Plan).

Question 4: Recreation

How should the Forest manage its outdoor recreation resources to respond to the needs of an increasing nearby population?

The Forest Plan recognizes the importance of recreation to the communities served by the Forest. Developed and dispersed recreational activities, and facility operation and maintenance, including trails, are managed under the Plan at standard service management level. Under these standards all facilities will be upgraded by the end of the first decade. Refer to Chapter Four, Forest wide dispersed recreation standards, standards for developed recreation sites, other recreation management areas standards, and Chapter III of the accompanying FEIS for an explanation of recreation service levels.

Dispersed recreational opportunities in a "roaded natural" setting will more than double, and opportunities in a "roaded modified" setting will increase during the next 50 years. As a result, semi-primitive, dispersed recreational opportunities will decrease.

Parts of 11 rivers have been identified as eligible for potential designation as a Wild/Scenic or Recreation River. The following new Special Interest Areas will be added to the three existing areas:

- Olallie Lake Expansion
- Little Crater Lake Expansion
- Barlow Road
- Larch Mountain
- Roaring River
- Lost Lake
- Bagby Hot Springs
- Sugar Pine
- Squaw Meadows
- Parkdale Lava Beds
- Cloud Cap-Tilly Jane

- Clackamas Lake
- Old Maids Flat
- Stringer Meadows

Under the Plan, 186,200 acres of Wilderness are managed to provide primitive recreation opportunities. Ecological, scientific, geological, educational, scenic, and historical values are to be left unimpaired. Projects are planned to restore overused Wilderness transition zones and popular Wilderness destinations to more primitive conditions. Opportunities for primitive recreation experiences within Wilderness should remain available for the next several decades.

Nineteen of the Forest's viewsheds are to be managed as viewsheds. This equals about 16% of the Forest. Among these viewsheds are those seen from the Columbia Gorge, Highway 26, Timberline Road, Lower Clackamas River, Trillium Lake, Bagby Hot Springs, Mt. Hood Meadows, Lost Lake, and Timberline Lodge.

Question 5: Unroaded Areas

How should remaining unroaded areas be managed?

Under the Forest Plan, essentially all of the Olallie unroaded area, and most of the Roaring River unroaded area retain unroaded characteristics through management as Special Interest Areas. Most of Wind Creek, Twin Lakes, Eagle, and Larch will remain undeveloped. Most of the following non-wilderness, unroaded areas will be roaded during the first 15 years: Bull of the Woods, Mt. Hood Additions, Salmon-Huckleberry, and Badger Creek. No new areas are recommended for designation as Wilderness under the Plan.

About 81,100 acres out of 118,000 acres now unroaded are managed to maintain their unroaded characteristics.

Question 6: Communities

How should the Forest respond to the social and economic concerns of local communities depending on the Forest?

Economic and social activities carried out in the Forest's area of influence are extremely varied and complex. Management of the Forest's resources affects some communities far more than it does others. Many residents within the area of influence rely on the Forest for commodities; others rely on its amenities for recreation.

The wood-products sector of nearby economies may decrease in importance in the near future. This may be caused by increases in the costs of production or improvements in sawmill technology, or a reduced availability of wood.

Although the total supply of logs from the Forest declines under the Plan, this supply is expected to continue without large differences decade to decade. This planned stability of long term timber supplies should help communities in their longer range planning.

Tourism and recreation are beginning to play greater roles in the economies of some communities in the Forest's area of influence. Both summer and winter recreation, particularly along major travel routes, are expected to show significant increases. The Forest is a major attraction for visitors as shown by visits totaling over seven million recreation visits. Visitor expenditures are substantial contributions to local economies. The Forest's emphasis on maintaining scenic travel corridors and improving recreation facilities reflects an awareness of this fact.

The Forest recognizes Indian treaty rights and remains committed to the protection of those rights. Although no Indian reservations exist on the Forest, one lies within the Forest's primary area of influence. This is the Warm Springs Reservation. An important part of cooperation between the Forest and the Warm Springs Tribes involves the management of fish and wildlife habitats, especially the habitats of anadromous fish.

Indian tribes, such as those at Warm Springs, have guaranteed rights to take anadromous fish from the Columbia River system. These rights have been secured by treaties negotiated with the United States Government. These treaties permit the tribes to take fish that pass their usual and accustomed places, and further guarantee the Indians a fair share of the relevant runs of anadromous fish. Rights like these have not been granted to any other social or ethnic group within the Forest's area of influence. As provided in the American Indian Religious Freedom Act, under this Plan, Native Americans are assured access to sites which allow them to continue their religious practices. Forest officials have cooperated with the leaders of the Confederated Warm Springs Tribes to make sure that access to resource areas is not denied. That cooperation will continue.

Chapter 4

Forest Management Direction

Chapter 4

Forest Management Direction

Introduction

This section of the Forest Plan outlines integrated resource management direction for the Forest. All portions of this Chapter are considered "Management Direction". All programs, projects and activities occurring on the Forest are expected to adhere to this management direction. Forest management direction is comprised of the following five facets.

Forest Management Goals

Forest management goals, representing all Forest resources, are broad direction established in the planning process to develop the preferred alternative. They provide the basic building blocks for the desired future condition of the Forest.

Desired Future Condition of the Forest

The Forest desired future condition portrays the character of the Forest after cumulatively implementing the Forest Management Objectives. This portrayal summarizes the physical and biological changes that result from management direction after 10 and 50 years.

Forest Management Objectives

The Forest management objectives section displays the anticipated, quantifiable goods and services, or "outputs," resulting from full implementation of management direction. Resource summaries, included within this facet of management direction, provide narrative descriptions of resource programs anticipated as necessary to accomplish the projected outputs.

Forestwide Standards and Guidelines

Forestwide Standards and Guidelines describe in a measureable fashion the bounds and/or constraints within which all activities necessary to accomplish Forest management objectives must operate. All resource program and project implementation activities necessary to move the Forest character toward (and to) the desired future condition must adhere to these Standards and Guidelines. Some Standards and Guidelines also serve as mitigation measures for management activity implementation.

Management Prescriptions

Management prescriptions describe specific management direction for 46 different "Management Area" types. Each Management Area (MA) has one (or more) goals, a MA desired future condition, a location description and a set of MA standards and guidelines comprising the MA management direction.

Forest Management Goals

1. Provide all persons equal opportunity to use the Forest regardless of race, color, creed, sex, marital status, age, handicap, religion, or national origin.

2. Honor treaty rights and privileges of Native Americans. Protect and preserve Native American ceded rights and privileges to access and use the Forest for traditional religious values.

3. Consider the needs of physically challenged individuals in the design and maintenance of Forest facilities.

4. Manage the Forest to break down social and institutional barriers to legitimate use of the Forest by non-traditional groups.

5. Assess and document all cultural resources. Protect, maintain and/or enhance prehistoric and historic sites, buildings, objects and antiquities of local, regional or national significance.

6. Protect, maintain or enhance the characteristics of floodplain, wetland and riparian plant communities. Maintain or increase aquatic and terrestrial habitat complexity and diversity within the riparian zone. Assure long term provision for riparian associated wildlife and plant species within the full spectrum of riparian zones across the Forest.

7. Protect, maintain or enhance the character and quality of water. Provide long term sustained production of water. Provide a favorable condition of water flow from the Forest for both on-Forest and off-Forest water users.

8. Maintain or increase fish habitat capability and assure long term sustained production of fish.

9. Protect, maintain and/or restore soil productivity throughout the Forest; stabilize and/or restore damaged or disturbed soil areas.

10. Provide management and maintenance of active landslides and large, slow moving earthflow areas.

11. Maintain viable populations of native and desirable non-native wildlife and plant species in perpetuity.

12. Protect, maintain or enhance habitat quality for wildlife. Maintain or enhance plant and animal habitat diversity.

13. Provide summer and winter habitat conditions sufficient to support deer and elk populations at levels consistent with Oregon Department of Fish and Wildlife's herd management objectives.

14. Manage Forest roads to consider deer and elk as a resource for recreational hunting, i.e. consider habitat access, movement patterns and dispersal of recreational hunters.

15. Protect or enhance habitat for threatened, endangered and sensitive plants and animals. Assist with population recovery of all listed threatened, endangered and sensitive species. Re-establish peregrine falcon and bald eagle as nesting species on the Forest.

16. Manage Forest recreational access to protect natural resources, provide for public safety, and minimize conflicts among the various users of the Forest.

17. Provide safe, efficient access for the movement of people and materials involved in the use and management of the Forest. Provide for construction and maintenance of roads, at a level that will minimize environmental damage.

18. Facilitate the exploration and development of energy and mineral resources on the Forest while maintaining compatibility with other resource values.

19. Produce wood fiber at sustainable levels consistent with other resource values and economic efficiency.

20. Reforest harvested areas with adequate stocking.

21. Manage a genetic tree improvement program to enhance the growth and quality of crop trees.

22. Provide fire protection, fuels treatment and pest management programs that are responsive to land and resource management goals and objectives.

23. Provide law enforcement and search and rescue services that are responsive to public need. Provide support to other agencies and local officials.

24. Cooperate with other Federal, State and local regulatory agencies to protect air quality and minimize impacts on smoke sensitive areas.

25. Ensure Forest Service management activities do not degrade air quality in Class I Wilderness, Class II Wilderness and general Forest. Ensure that resource values in the Wilderness are protected from the effects of air pollutants.

26. Provide a broad range of year-round, high quality dispersed recreation opportunities in an undeveloped forest environment.

27. Maintain a Forest trail system designed, located, managed and maintained to consider users needs and other resource values.

28. Provide a Forest trail system for year-round use, including winter trails in snow zones consistent with other resource values.

29. Provide a Forestwide bicycle trail system integrated with other transportation systems and coordinated with other agencies.

30. Emphasize "Pack-In/Pack-Out," "Tread Lightly," and "No-Trace Camping" educational programs.

31. Integrate fishing and hunting as recreational activities on the Forest.

32. Provide a broad range of year-round, high quality developed recreation opportunities.

33. Provide Forest visitors with visually appealing scenery. Manage all Forest lands to attain the highest possible visual quality commensurate with other resource values.

33. Manage vegetation and provide quality forage conditions for commercial domestic livestock. Prevent unacceptable damage to other resource values from commercial livestock grazing.

34. Manage land ownership within the Forest considering other resource goals and management efficiency.

35. Provide efficient management of administrative sites and facilities.

36. Provide for use and occupancy of the Forest by public and private interests when compatible with other resource objectives.

37. Provide a drug free work environment (Executive Order 12584, Sept. 15, 1986).

38. Integrate the activities of implementing the Mt. Hood National Forest Plan with activities of local dependent communities to: 1) improve employment opportunities, 2) improve incomes and well-being of the nation's rural people, and 3) strengthen the capacity of rural America to compete in the global economy.

39. Use the National Recreation Strategy to bring the American people into direct contact with their national forests by providing opportunities for agency/private partnerships to be developed.

40. Develop interpretive services programs for the Mt. Hood National Forest that will meet the needs of: Portland metropolitan people, rural population adjacent to the Forest and national and international visitors.

41. Manage the Forest to provide for the many significant values of old growth Forest for present and future generations recognizing that the amounts of old growth to be protected may range from large ecologically significant stands to small designated areas for public visitation and appreciation.

42. Protect and enhance the river and river related values for designated and candidate (eligible) Wild and Scenic Rivers.

43. Maintain genetic diversity of forest stands. Maintain the health of forest stands through genetic resilience, thus reducing the impact of disease, animal, insect, or climatic damage.

44. On acres allocated to timber production, increase net annual increment of usable wood fiber produced per acre of commercial forest land. Increase wood quality. Shorten time for stands to reach culmination of mean annual increment.

45. Produce genetically improved seed for reforestation of selected tree species.

Desired Future Condition of the Forest

The Forest desired future condition portrays the anticipated character of the Forest after cumulatively implementing the Forest Management Objectives. The anticipated physical and biological changes that result from management direction after 10 years and 50 years are summarized.

The Forest in Ten Years

Ten years is a very short time in the life of a forest and a relatively short time in the continuum of forest management. Therefore the Forest's overall character a decade in the future may be very similar to its existing condition. For example, significant difference in the supply of individual types of recreational opportunities is not expected to occur during the next ten years. Popular scenic travel routes retain much of their current landscape character. Timber harvest is managed most intensively where it conflicts least with other resource values. Current populations of fish and wildlife are maintained or increased by emphasizing habitat protection and enhancement.

Timber

During the next ten years, about half of the timber harvested will be older mature Douglas-fir from high quality, timber-growing sites. Planting, precommercial thinning, and plantation control is common. Areas harvested are adequately restocked within five years of a final harvest (36 CFR 219.27). Areas where timber is managed less intensively exhibit smaller openings, a variety of age-classes, and less intensive silvicultural activity. Timber harvest comes from lands suitable for growing timber. Lands unsuitable for growing timber serve noncommodity values and provide a small amount of salvage volume. Road construction continues somewhat below present levels.

Fish and Water

The Bull Run continues to be managed for high quality water. In general, there will be little apparent change in Forestwide riparian areas associated with perennial streams, lakes, reservoirs, and wetlands. These areas will reflect relatively high vegetative and structural diversity most closely associated with mature and old growth stand conditions. Many individual areas, totaling roughly 10-15 percent of the total areas for these riparian area types, reflect early seral stage vegetation associated primarily with past timber harvest activities. Riparian areas for intermittent streams, seeps, and springs increasingly show a shift toward early seral stage vegetation, particularly on those lands with a timber emphasis allocation.

There is localized improvement in riparian area and aquatic habitat (fish habitat and water quality) conditions. This is most apparent in B6 Special Emphasis Watersheds, A9 Key Site Riparian Areas, and stream systems where rehabilitation and enhancement activities have been completed.

Wildlife

Habitat is managed for the northern spotted owl, pileated woodpecker, pine marten, and other wildlife species represented by the named management indicator species. Areas of old growth are set aside for spotted owl habitat. Identified mature and old growth timber is managed for the woodpecker and marten along with managing for some timber volume, recreation, and other uses.

The mixture of forage and cover needed by deer and elk will be addressed. Seeding for grasses and forbs will enhance these animals' habitat. Timber in the pine/oak habitat on the east side is managed partly to benefit turkeys and silver gray squirrels.

Snags and wildlife trees are left in areas where timber will be harvested. Large, woody debris is left on the ground to continue the nutrient cycle and provide shelter for animal species which utilize such materials.

Recreation

Outdoor recreation opportunities on the Forest are available in a variety of settings. Operation and maintenance of facilities for developed recreation are financed at standard service level. Deteriorated sites are rehabilitated or closed. The Forest shall complete a developed site priority ranking to be used to allocate operations and maintenance funds. This process will include evaluating variables such as amount of use, cost per unit of output, and the uniqueness of the site. The ranking may result in closing of some developed sites and the expansion of others. Savings produced by closing some developed sites will be used to further improve or expand capacity at sites operating near capacity.

Opportunities for dispersed recreation in a roaded setting are plentiful. Activities such as hunting, sightseeing, ORV use, dispersed camping, cross-country skiing, and fishing are typical. Opportunities for dispersed recreation in unroaded areas are less plentiful. However, large Special Interest Areas such as Roaring River/Mitchell Flats, and Olallie Lakes will offer more primitive types of unroaded recreation.

There are five Wildernesses, plus a small part of the Mt. Jefferson Wilderness, on the Forest that will provide primitive recreation opportunities along with scenic, historical, and ecological experiences. Overused areas that have lost some of their wilderness values are gradually being restored to more primitive conditions.

Scenic Quality

Major roads and highways designated as scenic travel routes continue to appear in or near a natural condition. Other less frequented travel routes have noticeable alterations in the landscape character.

The visual character of the landscape results from prescribed visual quality objectives within distance zones from selected viewer positions. Visual management intensities, a combination of visual quality objective and distance zone, provide the following visual character from selected viewer positions:

☐ **Foreground Retention:** This management intensity applies to lands visible up to a distance of 0.5 mile from selected travelways, water bodies or public use areas.

- Vegetation is composed primarily of multi-age, multi-species stands with diverse understory of natural plant associations (where biologically feasible).
- Numerous large diameter, old trees are a major component of the stands (where biologically feasible).
- Small, natural appearing openings provide diversity and a sense of depth.
- The ground is generally free of unnatural forms and patterns of debris and litter.
- Seasonal changes in vegetation color and texture are emphasized.
- The target tree diameters for mature trees in the following vegetation types are:
    - grand fir (ponderosa pine), 24 inches dbh (diameter at breast height)
    - Pacific silver fir, 26 inches dbh (diameter at breast height)

  - western hemlock, 32 inches dbh (diameter at breast height)
  - mountain hemlock, 24 inches dbh (diameter at breast height)

☐ **Middleground Retention:** This management intensity applies to lands visible from 0.5 mile to 5.0 miles from specified travelways, water bodies, or public use areas.

- Natural appearing forest landscape.
- Mangement activities are not visually evident.
- Diversity of species, colors, and textures is desirable.

☐ **Foreground Partial Retention:** This management intensity applies to lands visible up to a distance of 0.5 mile from selected travelways, water bodies, or public use areas.

- A pleasing diversity of tree and shrub species of various sizes and ages, distributed in natural appearing patterns.
- Seasonal changes in vegetation color and texture are evident.
- Natural appearing openings provide diversity and enhance views to landscape features.
- The ground is generally free of unnatural patterns of debris and litter.
- The target tree diameters for mature trees in the following vegetation types are:
  - grand fir (Ponderosa pine), 21 inches dbh (diameter at breast height)
  - Pacific silver fir, 23 inches dbh (diameter at breast height)
  - western hemlock, 28 inches dbh (diameter at breast height)
  - mountain hemlock, 21 inches dbh (diameter at breast height)

☐ **Middleground and Background Partial Retention:** This management intensity applies to lands visible for distances from 0.5 mile to 5.0 miles from the selected travelways, water bodies, or public use areas.

- Natural appearing forest landscape, with little evidence of human alteration.
- Dominant visual impression is mostly continuous tree canopies, with diversity in occasional natural appearing openings.
- Mosaic of species and age classes add texture and color contrast in natural patterns.
- Management activities repeat form, line, color, and texture common to the characteristic landscape.

☐ **Foreground Modification:** This mangement intensity applies to lands visible up to a distance of 0.5 mile from roads, water bodies, or public use areas within management areas:

- B4 - Pine/Oak Habitat
- B5, DB5 - Woodpecker/Pine Marten Habitat
- B6 - Special Emphasis Watershed
- B8, DB8 - Earthflow Area
- B10, B11 - Deer/Elk Summer/Winter Range
- C1, DC1 - Timber Emphasis

unless a portion of the area is within a designated viewshed or Wild and Scenic River corridor, in which case the appropriate viewshed standard will apply.

- Diversity of species and ages, representative of the naturally occurring vegetative type, in patterns similar to, and compatible with the characteristic landscape.
- Seasonal changes in color are noticeable.
- Management activities are blended with adjacent vegetative and landform elements so that any unnatural edges, and the size of the affected area are generally not obvious, and do not dominate the scene.
- Unnatural patterns of the management activities, such as slash root wads, structures, etc. remain subordinate to the proposed composition.

☐ **Middleground and Background Modification:** This management intensity applies to lands visible for distances farther than 0.5 mile from selected travelways, water bodies, or public use areas.

- Diversity of species and ages distributed in patterns similar to, and compatible with the characteristic landscape.
- Management activities are blended with natural landforms and existing vegetation with natural shapes, edges, patterns, and sizes.
- Views of interesting landscape features.
- Offers a wide variety of land uses and recreation opportunities.

Air Quality

The existing character of the air quality continues to improve from the past. Reduced burning during the summer months provides for increased visibility. The amount of suspended particulates emitted is reduced significantly due to improved burning technology and improved evaluation techniques to predict when burning is needed.

Local Communities

Opportunities for the Forest to help enhance the vitality of surrounding communities will occur through a Regional initiative called the Pacific Northwest Strategy. It is envisioned that the Pacific Northwest Strategy will be a new focus of operation for many people, one that empowers Forest Service people and local citizens to look and work beyond the traditional boundaries. At the same time, it reaffirms and emphasizes working with other government agencies, local businesses, and the communities themselves in a spirit of interdependency and cooperation that has always existed at the local Ranger District level. As the Strategy becomes an integral part of doing business, its central focus will be to foster and enhance communication, cooperation, and partnerships.

The Forest in Fifty Years

After the Forest has been managed for 50 years as provided by this Plan, its present appearance will change to a more managed appearance. For example, it will be obvious that timber in certain areas will have been intensively harvested while wildlife habitats will have been preserved in other areas. Recreation use will intensify.

Timber

After 50 years, many stands suitable and programmed for timber production will have been harvested. In areas intensively managed for timber, many of the existing mature and overmature stands have been harvested and replaced with more vigorous and faster growing, managed stands. Emphasis on stocking level control measures will increase. More of the total wood fiber in trees will be utilized if markets exist for it, resulting in less residue available for firewood.

Fish, Water and Wildlife

Aquatic habitat capability over the long term is stable and improving. Standards to manage fish and water resources efficiently are in full effect. The implementation of rehabilitation and improvement programs will increase fish populations. Wildlife habitat diversity is moderate with identifiable tracts of mature and old growth stands managed for species depending on them. The majority of population levels will stabilize or decrease. Deer and/or elk populations may decrease.

Recreation

Recreation in the Forest 50 years from now will depend to a significant extent on sites privately developed and operated. As demands for winter sports, organizational activities, and overall developed recreation opportunities increase, they will be met by concessionaires or permittees. Primitive and semi-primitive recreation opportunities are limited primarily to Wilderness, Special Interest Areas, and some Unroaded Areas where natural conditions will be maintained. In Wilderness, heavily used trails, trailheads, and campsites have been returned to a more primitive state. As the demand for dispersed recreation in an unroaded setting begins to exceed capacity, systems to limit usage such as reservations, fees, or other methods may be initiated.

Visual corridors along popular travel routes should appear near-natural. Small openings and a variety of vegetation are visible along with improvements in viewpoints and vistas. Visitors who travel on roads outside main transportation corridors pass a mosaic of timber-cutting patterns. These vary in size, shape, and arrangement. These areas appear as part of an intensively managed forest.

Air Quality

Vegetation and fuel management require less use of prescribed fire as timber harvesting changes from regeneration harvest to commercial thinning. The number of acres requiring prescribed fire is approximately half the number in the first decade of the plan. The amount of suspended particulates emitted will subsequently be reduced proportionately. Hence, visibility continues to be improved.

Local Communities

Each community will have capitalized on its uniqueness and involved its citizens in the development of a desired future. The activities associated with the Pacific Northwest Strategy will continue to support the goals and plans of resource-dependent communities.

Forest Management Objectives

Forest management objectives support Forest Management goals and set the Forest on a schedule toward achieving the desired future condition. This chapter consists of two major sections; projected Resource Outputs (Table Four - 1) and Resource Summaries (i.e. narrative descriptions of resource objectives and summaries of expected resource conditions).

Projected Resource Outputs

Projected average annual resource outputs, activities and costs are displayed in Table Four -1. These resource outputs, or goods and services, are simply estimates of the outputs expected with full implementation of the Forest Plan. Actual achievement of resource outputs is dependent, to a large extent, on funding levels received for implementation. If funding received for Forest Management is significantly different from what is estimated to be necessary for full implementation, output levels should be expected to vary accordingly. Projected outputs could also change as new information is acquired. Monitoring will play a key roll in keeping track of differences between actual accomplishment and Plan projections.

Table Four - 1 Projected Average Annual Resource Outputs, Activities and Costs

Survey Output or Activity	Unit of Measure	Activity Code	Decade				
			1	2	3	4	5
Developed Recreation Use	M RVDs/yr[1]	AN122-2	3,000	3,000	3,000	3,000	3,000
Non-Wilderness Dispersed Recreation Use[2]							
Semi-primitive Nonmotorized	MRVDs/yr	AN122-1	248	248	248	248	248
Semi-primitive Motorized	MRVDs/yr	AN122-1	27	27	27	27	27
Roaded Natural	MRVDs/yr	AN122-1	5,037	5,037	5,037	5,037	5,037
Roaded Modified	MRVDs/yr	AN122-1	2,381	2,381	2,381	2,381	2,381
Rural	MRVDs/yr	AN122-1	909	909	909	909	909
Wilderness Use	MRVDs/yr	AW1	144	144	144	144	144
Roadless Areas							
Roadless Area Acreage Maintained	Acres	AN12	81,100	81,100	81,100	81,100	81,100
Trail Construction and Reconstruction	Miles/yr	AT22	35	35	35	35	35
Cultural Resources							
Survey	Acres	AC111	1000	1000	1000	500	100
Evaluate	Sites	AC112-1	10	10	10	10	10
Interpret	Sites	AC124	5	5	5	5	5
Research Excavations	Sites	AC123	3	3	3	5	10
Publications	Report	AC124	5	5	5	5	10
Public Education	Project	AC124	2	2	2	3	3
Management Plans	Unit	AC112	1	1	1	1	1
Monitoring	Sites	AC121	100	200	300	300	300
Designated Wild & Scenic Rivers							
Wild Segments	Miles	AN-12	33.0	33.0	33.0	33.0	33.0
Scenic Segments	Miles	AN-12	26.5	26.5	26.5	26.5	26.5
Recreational Segments	Miles	AN-12	61.2	61.2	61.2	61.2	61.2
Eligible Wild & Scenic River							
Wild Segments	Miles	AN-12	11.8	Miles protected beyond first decade dependent upon final outcome of WSR suitability studies.			
Scenic Segments	Miles	AN-12	36.3				
Recreational Segments	Miles	AN-12	56.5				
Old Growth Forest							
Existing Quantity	M Acres		320.6	299.7	284.7	269.6	254.6
Potential Quantity (including ingrowth)	M Acres		320.6	373.3	407.2	441.2	475.1

Table Four - 1 Projected Average Annual Resource Outputs, Activities and Costs (continued)

Survey Output or Activity	Unit of Measure	Activity Code	Decade				
			1	2	3	4	5
Expected Visual Condition							
Preservation	Acres		192,200	192,200	192,200	192,200	192,200
Retention	Acres		Insufficient data regarding current visual condition to project outputs.^{3}		112,600	112,600	112,600
Partial Retention	Acres				270,90	270,900	270,900
Modification	Acres				468,900	468,900	468,900
Maximum Modification	Acres				0	0	0
Wildlife Management Indicator Species							
Northern Spotted Owl	Pairs		178	164	157	151	144
Pileated Woodpecker	Pairs		275	275	263	251	239
230Pine Marten	Pairs		604	604	579	553	529
512Silver Gray Squirrel	Numbers		4,100	5,600	4,800	5,600	5,500
Turkey	Numbers		4,100	6,700	5,300	6,700	6,500
6,500Deer	Numbers		28,200	26,600	28,200	26,600	28,200
Elk	Numbers		7,300	6,900	7,300	6,900	7,300
Salmonid Smolts	Index[4]		100	105	109	112	115
Legal Trout	Index		100	103	105	108	110
Anadromous Fish							
Commercial Harvest	M Pounds/yr		491	515	535	555	[illegible]5
Habitat Improvement-Structural	Structures	CA221	2,000	1,775	1,600	1,500	1,400
Habitat Improvement-Non-Structural	Acres	CA222	350	300	250	200	200
Resident Fish							
Habitat Improvement-Structural	Structures	CI221	2,000	1,900	1,800	1,700	1,600
Habitat Improvement-Non-Structural	Acres	CI222	225	200	200	175	150
Wildlife Habitat Improvement							
P & M $ (NFWF)	Acres	CW222	3,920	4,000	4,500	4,800	5,000
	Structures	CW221	29,895	30,000	35,000	30,000	30,000
KV $ (CWKV)	Acres	CW222	64,246	60,000	50,000	45,000	40,000
	Structures	CW221	102,815	100,000	100,000	95,000	90,000
Wildlife - Threatened, Endangered and Sensitive Species Habitat Improvement							
P & M $ (NFWF)	Acres	CT222	3,054	3,000	3,000	3,000	3,000
	Structures	CT221	20	50	75	100	150
KV $ (CWKV)	Acres	CT222	4,916	5,000	4,500	4,000	3,500
	Structures	CT221	500	450	400	350	300

Table Four - 1 Projected Average Annual Resource Outputs, Activities and Costs (continued)

Survey Output or Activity	Unit of Measure	Activity Code	Decade				
			1	2	3	4	5
Wildlife and Fish Recreational Use	M WFUDs[5]		587	592	625	650	738
Range Management							
Livestock Grazing Capacity	M AUMs[6]	DN1	7,200	4,600	4,500	4,300	4,100
Timber Management							
Allowable Sale Quantity (ASQ), Green	MMBF[7]/yr	ET114	189				
	MMCF[8]/yr	ET114	31.9	31.9	31.9	31.9	31.9
Other Timber Volume[9] (including fuelwood)	MMBF/yr	ET114	26.0	26.0	23.0	23.0	23.0
	MMCF/yr	ET114	3.8	4.4	3.8	3.8	3.8
Timber Sale Program Quantity	MMBF/yr	ET114	215				
	MMCF/yr	ET114	36.4	36.4	36.4	36.4	36.4
Fuelwood	MMCF/yr	ET12	0.6	0.6	0.6	0.6	0.6
Regeneration Harvest	M Acres/yr	ET114	2.9	2.8	2.7	2.6	2.4
Reforestation	M Acres/yr	ET24	2.9	2.8	2.7	2.6	2.4
Timber Stand Improvement	M Acres/yr	ET25	2.2	2.7	2.9	2.7	2.4
Commercial Thinning	M Acres/yr	ET114	0	0	0	0.4	2.2
Long Term Sustained Yield Capacity	MMCF/yr		31.9	31.9	31.9	31.9	31.9
Timber Growth since previous decade	MMCF/yr			23.5	24.4	26.7	29.4
Water/Sediment							
Water Yield	M Acre Feet/yr		5,446	5,446	5,446	5,446	5,446
Sediment Delivery	Index[10]	FW12	110,000	104,000	104,000	106,000	119,000
Roads Constructed							
Arterial and Collector	Miles/yr		0.0	0.0	0.0	0.0	0.0
Local	Miles/yr		16.6	12.8	9.0	7.8	6.5
Roads Reconstructed							
Arterial and Collector	Miles/yr		17.5	17.5	17.5	17.5	17.5
Local	Miles/yr		74.0	73.0	74.0	71.0	67.0
Roads Suitable for Use							
Passenger Car	Total Miles		1,122	1,122	1,122	1,122	1,122
High Clearance Vehicle	Total Miles		1,678	1,704	1,722	1,738	1,750
Fire Management							
Effectiveness Index	$/M Acres Protected/yr	PF114	2,873	2,854	2,855	2,832	2,776
Fuel Treatment	Acres/yr	PF2	3,060	3,000	3,180	2,960	3,000

Table Four - 1 Projected Average Annual Resource Outputs, Activities and Costs (continued)

Survey Output or Activity	Unit of Measure	Activity Code	Decade				
			1	2	3	4	5
Air Quality							
Suspended Particulates less than 10 microns (PM10)	Tons/year		1,447	1,377	1,442	1,367	1,412
Change in PM10 from Baseline	Percent		-63%	-84%	-84%	-84%	-84%
Energy/Minerals							
Energy Minerals Produced	Billion BTUs	GM11	0	3,800	13,000	22,000	33,000
Non-Energy Minerals Produced	MM $	GM11	.130	.125	.120	.115	.110
Geothermal Resources							
High Potential Available	M Acres	GM12	4,300	4,300	4,300	4,300	4,300
Moderate Potential Available	M Acres	GM12	123,300	123,300	123,300	123,300	123,300
Economics/Social[11]							
Operational Costs	MM $/yr		10.2	10.2	10.2	10.2	10.2
Capital Investment Costs	MM $/yr		35.6	35.6	35.6	35.6	35.6
Total Budget	MM $/yr		45.7	45.7	45.7	45.7	45.7
Payments to Counties	MM $/yr		6.4	Not projected			
Change in Jobs	Jobs		2,500	Not projected			
Change in Income	MM $/yr		45.1	Not projected			
Human Resource Program	Person Years		122	183	238	273	314

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[1] *M represents 1000 units. RVD represents Recreation Visitor Day, a unit for measuring recreation use, with 12 visitor hours in a visitor day.*

[2] *Refer to Chapter III, FEIS for description of Recreation Opportunity Spectrum Definitions.*

[3] *Due to insufficient data regarding the current visual condition of the forest, it is not possible to estimate the visual quality outputs in the first two decades. It is expected that any acres currently below the level of Modification will achieve the level of Modification with the first two decades as a result of new growth and/or rehabilitation.*

[4] *An index value of 100 equals the correct potential habitat capability for 2.6 million smolt or 1.5 million legal trout. Entries less than or more than 100 represent proportionate descreases in habitat capability.*

[5] *WFUDs = Wildlife and fish User Days*

[6] *AUMs = Animal Unit Months*

[7] *MMBF = Million Board Feet*

[8] *MMCF = MIllion Cubic Feet*

[9] *Other Timber Volume = Allowable Sale Quotient Salvage, Other Saw Timber, Submerchantable volume*

[10] *Index = Estimated tonnage of sediment delivered to streams as a result of management activities, i.e. not including natural sediment contributions.*

Resource Summaries

Resource summaries for individual resource areas provide narrative descriptions of programs and projects anticipated as necessary to accomplish the projected resource outputs. These planned programs and projects will become the foundation for developing the Forest's annual budget proposal and program of work.

Minerals, Energy and Geology

The primary goal of energy and minerals management on the Mt. Hood National Forest is to encourage and assist the location and development of strategic minerals and power sources vital to our country. The energy and minerals program will continue to review actions which may restrict or deny mineral entry on National Forest System lands. These include but are not limited to land exchanges and mineral withdrawals. As planning processes move Management Areas toward their desired furture condition, energy and minerals will be evaluated equally in terms of multiple use management.

Within the next ten years, the Pacific Northwest will move from a surplus of electricity to a deficit as projected by the Northwest Power Planning Council in 1990. For the first time, the Northwest Power Planning Council recommends a confirmation program for geothermal energy. What this means is an increased interest in geothermal resources. To prepare for this occurrence an education program will be necessary for proper management of the lands which have geothermal potential on the forest.

The primary goal for the geology program on the Mt. Hood National Forest is to maintain hydrologic and physical balances to prevent reactivation or acceleration of landslides. This is in an effort to prevent loss or degradation of natural resources such as reduced water quality and soil productivity and loss of facilities and capital investments (primary roads). Monitoring the effects of land management will determine whether our efforts to prevent the reactivation, of stable landslides and the activation of new landslides are viable.

Slope stability projects have been identified in the "Geology Needs Inventory." New projects will be added as technology and funding become available. Existing projects will be inspected after rain on snow storm events which typically occur during the spring.

Soil

The primary goal of soil management is to maintain or enhance soil productivity. The level of soil productivity maintenance or enhancement is related closely to the type and amount of management activities. The activities related to harvest of timber and road building have the greatest potential for reducing site quality.

All management activities will be subject to the Forestwide Standards and Guidelines for soils.

A forest goal is to allow no more than 15% of an activity area to be in a degraded condition from the combined impacts of compaction, displacement, and severe burning.

Monitoring of the effects of land management activities will determine whether these activities are having an effect on soil productivity. Although mitigating measures and constraints will be implemented for all activities that have the potential to degrade the soil resource, some impacts will still occur. Monitoring will determine the effectiveness of these mitigating measures.

Soil restoration activities will be done in coordination with water quality restoration needs. These activities will include those lands degraded by excessive erosion, compaction, displacement, and mass movement. All identified projects are listed in the

"Water Improvement Needs Inventory." New projects will be added to the inventory and prioritized. Project selection will be based on the potential value to soil productivity and the watershed, and also on funding availability. Existing projects will be inspected annually and needed maintenance will be done on those soil and water projects to prevent further resource damage or loss of investment.

Air

All programs and activities included in the Plan will apply standards and guidelines together with the management prescriptions in this chapter. This will assure that the effects on long term air quality are positive and supportive of State and national goals to improve air quality on the Forest and within the Region.

If there is reason to expect there are high air pollutant concentrations, the Forest will determine the locations of these concentrations using existing emissions and air quality monitoring data, personal observations, dispersion modeling and professional consultation. In addition, the Forest will establish the current condition of Forest resources in these areas and establish a monitoring system to assess the effect on the resources (vegetation, soil, water, etc.) from air pollution.

In Class I wilderness areas, the Forest shall identify air quality related values (AQRV's), establish a screening procedure to review the effects of air pollutants on AQRV's and inventory and establish the current condition of AQRV's. As they occur, the Forest will review Prevention of Significant Deterioration permit applications using the current screening procedure and prepare recommendations to the appropriate regulatory agencies on these applications for the Federal Land Manager.

The prescribed burning program is critical to the attainment of some management objectives in the Plan. The overall objective of the program is to use prescribed fire to accomplish objectives only where analysis has shown that the use of prescribed fire is the most effective and feasible alternative. The Forest will reduce emissions from prescribed burning consistent with goals established by the State of Oregon Department of Environmental Quality.

The effects of the various management activities involving prescribed burning on localized air quality will be monitored based on the production of total suspended particulates (TSP) emissions and the production of suspended particulates less than 10 microns in size (PM10). The levels of these emissions produced will be calculated annually as described in the monitoring plan. This calculation will consider fuel moisture, time of year burning occurs, and the total tons of available fuel consumed.

Water

A key goal of the Forest Plan is to manage the forest resources to protect and maintain the character and quality of water; provide long-term sustained production of water; and provide a favorable flow from the Forest for both on-Forest and off-Forest water users. An additional goal is to protect the unique and valuable characteristics of floodplain and riparian zones; maintain or increase aquatic habitat complexity and diversity; and assure the long-term production of associated wildlife and plant species within the full spectrum of forest riparian areas. Included is the goal to maintain or increase fish habitat capability. Attainment of this last goal is largely dependent on maintenance or improvement of water quality, specifically reductions in sediment and decreases in late summer stream temperatures.

All resource management practices will be designed to meet established water quality goals and State water quality standards. Watersheds supplying domestic water for cities, towns, recreation sites, and individuals will be managed so that water quality of the source stream is not degraded below existing or natural levels.

Wild and Scenic Rivers and streams which support major fisheries will also be managed to meet the no-degradation goal.

The Forest watershed management program provides leadership in the protection, maintenance, and improvement of watershed resources. It also provides support to other functional areas. Moreover, the program initiates and is responsive to changes in Forest needs, goals, and direction, and to public issues.

Public interest in the protection and management of water and riparian-dependent resources is expected to remain high throughout the planning period. Watershed program emphasis, in response to public interest and agency concern, is also expected to grow moderately and remain high throughout the planning period.

All resource management activities will be designed to achieve compliance with State requirements in accordance with the Clean Water Act for the protection of waters of the state of Oregon. A key mechanism for the protection of water quality and favorable conditions of flow is the application of Best Management Practices (BMPs - FEIS Appendix H). BMPs will be applied in planning, design, implementation, and maintenance of all Forest activities. These practices will be further refined at the project level to best fit local conditions and resource needs. Forest resource management personnel will receive training in BMP implementation.

All management activities will be subject to the Forestwide and Management Area Standards and Guidelines which deal with water, riparian management, soils, geology, and related topics.

Riparian areas will continue to receive special attention. Within water/riparian emphasis Management Areas (Key Site Riparian, General Riparian, Special Emphasis Watershed), riparian-dependent resources (fish, water quality, wildlife habitat) will receive preferential consideration when conflicts occur among land use activities.

Riparian zones and the upland transition areas adjacent to streams and other water bodies will be managed through the establishment of Streamside Management Units (SMUs) during project planning. Timber harvest and ground disturbance will be limited as specified in the applicable Forest Plan Standards and Guidelines. The degree of protection will be based on the inherent sensitivity of the resources and the associated beneficial uses. On-the-ground locations and prescriptions will vary according to site-specific needs. The involvement of hydrologists and other watershed specialists during project planning and implementation is essential to meet watershed management goals.

Uneven-aged timber management may be utilized in riparian areas. Programmed harvest is allowed, however all timber harvest in riparian areas will be subordinate to the needs of riparian-dependent resources. The amount of allowable harvest within any riparian area will be a function of the sensitivity and associated beneficial uses of the area.

Watershed and riparian restoration activities will continue at accelerated levels in degraded watersheds and riparian areas to improve water quality (and fish habitat), as well as other resource values on the Forest. A combination of soil and water improvements in or adjacent to riparian areas and improved management direction incorporated into the Standards and Guidelines will be the dominant watershed improvement activities on the Forest. Future maintenance of these improvements will be necessary in some cases.

Watershed specialists identify watershed improvement needs for inclusion in the Forest's Watershed Improvement Needs Inventory (WIN), and help design and implement watershed improvement treatments based on project priority. Priority areas for aggressive restoration typically include sources of sediment such as eroding road fills, gullies, and sloughing or unstable channel banks.

An estimated 300 to 400 acres per year of watershed improvement work will be completed under the Forest Plan. Appendix A summarizes inventoried watershed improvement needs for the Forest. The projects identified in Appendix A are scheduled for accomplishment using appropriated funds. The opportunity for accomplishing these and anticipated additional watershed improvement projects with funds derived from the sale of timber (Knutson-Vandenburg or K-V funds) will be identified during timber sale project planning. Multi-functional funding, e.g. watershed, fisheries, roads and trails, and wildlife, etc., and the use of volunteer groups and private sector partnerships should be considered to accomplish all projects.

Public concerns and Forest Service management needs require that activities in riparian areas that might impact water uses be monitored and documented to ensure that watershed management goals are realized. Monitoring of water quality and riparian condition by projects and by long-term trend analysis will be used to document effects of plan implementation. The objectives of water resource monitoring are to determine if Forest Plan standards and guidelines have been met, and to assess their effectiveness and make changes if necessary. Monitoring the implementation and effectiveness of applied BMPs is essential to achieving the key objective and fulfilling the Forest Service responsibility as a designated water management agency for non-point source pollution control. Both extensive and intensive monitoring procedures will be implemented. Details of the water resource monitoring elements can be found in Chapter 5.

Assessments of the cumulative effects of all activities on the soil and water resource will be provided by site, watershed, and major planning basin. The Forest's 15 major Planning Basins will be divided into smaller subwatersheds or "watershed analysis areas" ranging in size from 600 acres to 3,000 acres to accommodate more detailed analysis of cumulative effects on a project basis.

Securing both in-stream and consumptive use of water is critical to carrying out National Forest programs. Working cooperatively with the State of Oregon on basin water rights adjudications and securing water rights under state law is an important program element.

Coordination regarding management concerns will continue with State agencies (e.g. Department of Environmental Quality, Department of Fish and Wildlife, etc.) having management or statutory responsibilities for water and riparian-dependent resources. Coordination will also continue with the involved municipalities which derive water from the Forest (e.g. City of Portland, City of The Dalles, etc.). Continued cooperation and coordination with the various public basin groups will have growing importance during the life of the Plan, especially with those groups having interest in the management of the large, environmentally or politically sensitive watersheds.

Fisheries

Fish Program Mission Statement. Aquatic ecosystems will be managed based on scientifically sound principles from a basin or watershed perspective. Fisheries personnel will develop and implement a program that is sensitive to the changing needs and perceptions of the public and Forest Service management. We will develop a marketing strategy and partnerships to meet those needs. By doing so, fisheries personnel will clearly define their roles and responsibilitites and integrate fisheries program goals and objectives into the overall District/Forest management program. Fisheries personnel shall be fully trained in, or have access to, current technology and utilize this knowledge to manage the Forest's aquatic ecosystems. All actions shall be conducted in a professional manner while emphasizing accountability, efficiency, and cost effectiveness. To communicate effectively we will leave a legacy/history, incorporate ethical goals into our professional standards, and use planning as a tool to meet unit, Forest, and resource stewardship goals.

The objectives for the fish habitat management program have been summarized as:

- Prepare a 5-year fish habitat management action plan for the Forest by March 1991, emphasizing a balanced program of resident/anadromous fish, lakes/streams, projects/planning, preservation/use, diversity of ecosystems, etc.
- Establish stock assessment process to keep track of fish stocks of concern including T, E, and S.
- Pursue an education program to smooth transition to the Forest Plan Standards and Guidelines.
- To the best of our abilities, forecast future changes and develop management techniques and policies that allow flexibility and adaptation to changing Forest uses.
- Conduct a futuring exercise with District biologists to address each program component.
- Develop "Urban Forest Opportunities" program and project list by March 1991. (School programs, Campground Programs, Business Education Program and Information and Education Program)
- Clearly define the fisheries program and provide cross training opportunities. Involve the public in developing and critiquing the program. Seek out public needs and perceptions and foster positive community ties.
- Establish contracts, by developing and revising District/Forest Mission Statements and Goals and Objectives, addressing the way that we operate and image that we project, both within and outside of the FS.
- Establish a Forestwide standard data base including completion of Riparian Assessment on all stream miles by 2000, establish a Forestwide Cumulative Watershed Effects process, create a standard budget worksheet to streamline the budget process and set up District files which document planning, methods, and results of past and present projects to ensure continuity when personnel changes.

Wildlife

The Mt. Hood National Forest provides a wide diversity of wildlife habitat conditions. It is also located in an urban situation which provides opportunities for many people to interact with wildlife.

Goals for the Wildlife Program are to:

- Provide leadership in the Region and Nation in integrated resource management.

  This goal will be achieved through the following management objectives:

  - Ensure plant and animal diversity is maintained and/or enhanced.
  - Carry wildlife habitat management beyond minimum requirements.
  - Emphasize all forms of wildlife management for a variety of species and habitats, not just those addressed specifically in the Forest Plan.

  Features of the wildlife program will include:

  - Project Plan. These plans will include development of species plans and area plans.

  - Monitoring Plans. These plans will include review of wildlife objectives associated with timber sales and post-project monitoring.
  - Habitat Protection and Enhancement. Habitat enhancement projects will be developed that are consistent with project plans.
  - Public Involvement. Public involvement will be sought during planning and implementation.
  - Integration of the Wildlife Program with Other Resource Areas.
  - Development and use of innovative technologies for implementation of the Forest Plan.

Management objectives are reflected in the Wildlife Activity Schedule. Challenge Cost Share ($30,000/year), the K-V Program ($1 million/year) and the Structural Improvement Program ($300,000/year) will all be used to further Forest Wildlife objectives.

- Do proactive information sharing with other resource sections on the Forest.

The primary management objective is to be innovative in seeking ways to achieve wildlife objectives. This also helps the wildlife discipline to understand the needs of other resource specialities and to find ways to assist them in achieving their goals and objectives.

Ways this objective can be achieved are to:

  - Encourage regular information sharing between resource disciplines through cross training.
  - Attendance at other specialist meetings besides wildlife.

- Enhance Forest relationships with the public by providing programs that meet the needs of the public.

The mangement objective is to connect and network with communitiy based organizations, programs, agencies and groups which have an interest in wildlife and wildlife habitats on the the Mt. Hood National Forest.

Ways this management objective can be achieved are to:

  - Utilize public meetings, club and community meetings, mailings and notices to identify public wants and needs.
  - Conduct informal user surveys and identify public preferences.

The following is a brief discussion of wildlife habitats needed to support populations of management indicator species. Specific direction for wildlife habitat management, such as spacing of habitat areas, is included in S&Gs in this chapter. More detailed activity and project schedules are included in Appendix A.

Pileated Woodpecker and Pine Marten

Two indicator species, pine marten and pileated woodpecker, and the species they represent are considered dependent on mature conifer habitat for food, cover, and nesting sites. Ninety-six habitat areas (at least 300 acres each) of mature coniferous habitat will be provided for the pileated woodpecker and 231 habitat areas (at least 160 acres each) for the marten. All districts will develop management implementation plans for each of these areas. Forestwide S&Gs will be used outside of these areas to assure some suitable habitat remains outside of specifically designated lands. The Wildlife Resources map, supplement to the Preferred Alternative (in the accompanying map packet), displays B5 Pileated Woodpecker/Pine Marten Area Management Areas.

Merriam's Turkey and Silver Gray Squirrel

Turkey and squirrel serve as indicators of management activities in the ponderosa pine/white oak habitat. Management emphasis and a specific land allocation (B4) will be provided on the east side of the Forest. Approximately 11,550 acres will be managed for turkey and squirrel. S&Gs specific to these areas will guide future management. Forestwide S&Gs will be used outside of these areas to assure some suitable habitat remains outside of specifically designated lands.

Deer and Elk

Winter range and quality forage areas are the key habitats for deer and elk. The key component of winter range is thermal cover. High quality forage is found primarily in meadows, pastures or riparian areas. Management area B10 emphasizes management of deer and elk winter range by maximizing optimal cover/forage ratios, minimizing road densities and maximizing big game habitat improvement projects within winter range. Management area B11 emphasizes management of deer and elk summer range by maximizing cover/forage ratios and big game habitat improvement projects within summer range emphasis areas. S&Gs specific to these areas will guide future management. Management for deer and elk in other management areas would follow the Forest-wide standards and guidelines.

Threatened, Endangered and Sensitive Species

Federally listed theatened and endangered (T&E) species on the Forest are the peregrine falcon, bald eagle and spotted owl. The major management goal for these species is full recovery on Forest lands. Achievement of this goal will require monitoring of populations and habitats on a continuing basis.

Peregrine Falcon

The only federally listed endangered species present on the Forest is the peregrine falcon. Two nesting pairs were discovered on the Forest in the spring of 1990. All peregrines currently occur in land allocations which are compatible with full protection of peregrine habitat. A hacking program in cooperation with the Oregon Department of Fish and Wildlife and Peregrine Fund, was initiated in 1986. To date twenty-four birds will have been released on the Forest. A peregrine falcon management plan, which is consistent with the Recovery Plan for peregrine falcon (Pacific population), U.S. fish and Wildlife Service (1982), will be developed within two years of completion of the Forest Plan.

Bald Eagle

At the present time no eagles nest on the Forest, however potential nesting habitat is available. Potential bald eagle nesting habitat will be provided in two primary ways: 1) protecting it from timber harvest, and 2) keeping disruptive activities away from potential nest sites. A specific land allocation (A13) will be included for bald eagles. Twenty-six sites with at least 30 acres each are located in suitable habitat throughout the Forest. All districts with these areas will develop a management implementation plan for these areas. Habitat outside of these areas will be protected under Forestwide Standards and Guidelines. A Forestwide bald eagle management plan, which is consistent with the Pacific Bald Eagle Recovery Plan (U.S. Fish and Wildlife Service, 1986), will be developed within two years of completion of the Forest Plan.

Spotted Owl

The northern spotted owl is dependent upon well-spaced mature and old growth coniferous forest. The owl is listed as a threatened species by the State of Oregon, and as a threatened species by the US Fish and Wildlife Service. Spotted owl management consists of protection of habitat charcteristics favored by spotted owls from adverse modifcation, and restriction of activities that could cause nest abandonment or mortality of young. Sixty-six management areas with at least 1500 acres each are located throughout the Forest. All districts will develop management implementation plans for each of these areas. Habitat outside of these areas will be protected under Forestwide Standards and Guidelines.

Sensitive Species

Species Management Guides will be prepared to ensure that viable populations and genetic variablity of sensitive animal species that are known to occur on Mt. Hood National Forest are maintained through time.

These guides will prescribe management direction for protection of a species based on species needs. They will contain a description of range, abundance, and distribution of the species, ecological and habitat requirements and the species response to disturbance. Also included will be recommended monitoring standards in order to determine effects of management activities on the species and population trends. Recovery plans will be recommended when needed.

Priority for preparation of Species Management Guides will be given to those species that, due to their distribution and habitat requirements, repeatedly come into conflict with forest management activities, those species that are federal candidates for listing and those species that have all or a major portion of their distribution on Mt. Hood National Forest. Two or more Guides will be prepared per year.

Sensitive Plants

The goal of the Sensitive Plant Program is to develop and implement management practices to ensure that species do not become listed as threatened or endangered because of Forest Service action (FSM 2670.22). To achieve this goal, the sensitive plant program will:

- provide management to maintain or enhance viable sensitive plant populations;
- conduct all sensitive plant activities in a professional manner;
- establish procedural guidelines and record keeping which are consistent across the Forest;
- build relationships with other federal and state agencies, private organizations, and the public;
- prepare species management guides and monitoring plans to meet our viability concern;
- complete a Forestwide inventory of sentive plant species by the close of the first decade.

Species Management Guides will be prepared to ensure that viable populations and genetic variability of sensitive plant species that are known to occur on Mt. Hood National Forest are maintained through time.

These guides will prescribe management direction for protection of a species based on species needs. They will contain a description of range, abundance, and distribution of the species, ecological and habitat requirements, and the species response to disturbance. Also included will be recommended monitoring standards in order to determine effects of management activities on the species and population trends, and will recommend recovery plans when needed.

Priority for preparation of Species Management Guides will be given to those species that, due to their distribution and habitat requirements, repeatedly come into conflict with Forest Management activities, those species that are federal candidates for listing, and those species that have all or a major portion of their distribution on Mt. Hood National Forest.

The following is a planned schedule for preparing Species Management Guides for sensitive plant species. Priorities may vary as more is known about species distribution and requirements, and as species are dropped or added to the Region 6 Regional Foresters' list of sensitive plant species.

- 1989 - *Aster gormanii*
- 1990 - *Corydalysis aquae-gelidae*
    - *Lycopodium selago*
    - *Sisyrinchium sarmentosum*
- 1991 - *Streptopus streptopoides*
    - *Scheuchzeria palustris* var. *americana*
    - *Botrychium* spp.
- 1992 - *Coptis trifolia*
    - *Lycopodium annotinum*
- 1993 - *Poa laxiflora*
    - *Astragalus howellii* var. *howellii*
- 1994 - *Ophioglossum vulgatum*
    - *Calamagrostis breweri*
- 1995 - *Arabis sparsiflora* var. *atrorubens*
    - *Lycopodium complanatum*
- 1996 - *Erigeron howellii*
    - *Hieracium longiberbe*
- 1997 - *Arabis furcata*
    - *Agoseris elata*
- 1998 - *Fritillaria camschatcensis*
    - *Bolandra oregana*
- 1999 - *Sullivantia oregana*
- 2000 - *Erigeron oreganus*
- 2001 - *Agrostis howellii*
- 2002 - *Hackelia diffusa* var. *diffusa*
- 2203 - *Phlox hendersonii*
- 2004 - *Scribnaria bolanderi*
- 2005 - *Tauschia stricklandii*

Fire Management (Forest Protection and Prescribed Fire)

The fire protection and use program on the Mt. Hood National Forest is a service program which supports the other resource management programs identified in the Plan. The program includes all activities for the protection of resource and other values from wildfire. In addition, the program provides the leadership in the planning and execution of the use of prescribed fire to meet land and resource management goals and objectives. Fire managements role is to coordinate, plan and implement the fire protection and use programs consistent with the standards and guidelines and management prescriptions.

Fire protection and use activities have a direct effect on the physical and biological environment, including air quality. Monitoring the effects of the fire management program will help determine if management practices are changing the physical and biological environment. This monitoring will determine if the cost of program activities will meet the cost efficiency criteria used to define the Forest's fire protection and use program. The fire protection and use programs are defined below.

Fire Protection Program

The fire protection program includes fire prevention, presuppression (i.e. detection, dispatching, aviation, fire danger rating, and training), fire suppression, and fire management analysis and planning activities. The collective application of all fire management activities required to meet the fire management direction for each Management Area, including fuels management, will be documented in a detailed Fire Management Action Plan (FMAP). The FMAP is the detailed implementation plan for the fire protection and use program. It will be completed within one year after approval of this Plan.

An appropriate suppression response (dispatch) will be made to all wildfires. This response will consider the location of the fire, the conditions which could cause the spread and suppression difficulty of the fire, and the resource values which are affected. When fire suppression forces reach the wildfire, they will apply the appropriate fire suppression strategy which allows for the control of the fire with minimum cost plus damage to the resources affected.

Natural ignitions from lightning which occur in Wilderness Areas will be treated as prescribed fires until declared wildfires. Human-caused fires in Wilderness Areas are wildfires and will be suppressed in a manner which has high regard for wilderness values commensurate with cost efficiency.

The standards and guidelines outlined in the Plan are estimated to result in no increase in the number of wildfires on the forest. Significant fire prevention efforts since the mid-1970's to reduce the number of human-caused fire, particularly those from industrial causes, have been effective and the continuance of these efforts is advocated in the Plan. The average annual acreage burned by wildfires is estimated to be 408 acres for the first decade.

Implementation of the fire protection program involves considerable external coordination. The majority of this coordination involves formal fire protection agreements with neighboring fire suppression organizations. The Forest has cooperative agreements with the Oregon Department of Forestry, the USDI Warm Springs Indian Agency, and the USDI Bureau of Land Management.

Fire Use Program

The fire use program involves the planning, administration and direct implementation of prescribed fire activities for the protection, maintenance and enhancement of resource productivity. The role and potential of fire as an integral element of the forest and rangeland environment will be analyzed in the preparation of resource management programs and activities. Based on the analysis, prescribed burning will be considered as a tool to meet management objectives. Its use is advocated where the analysis indicates it is the most effective and feasible alternative. All prescribed burning will be done in compliance with the Oregon State Smoke Management Plan and will include mitigation measures to minimize the impacts to air quality.

Range Management

Under the direction of this Forest Plan, livestock grazing will remain a moderate use on the Mt. Hood National Forest. AUM's will remain close to existing levels for the first decade, but may decrease in the following decades as harvest levels decline, producing less transitory range. The 1990 range program included a total of 4,323 animal months under permit. During the period of this plan, proper livestock use of available forage will be emphasized. Resource coordination, range improvements, and allotment plans incorporating site specific objectives will be needed for proper utilization of the forage base.

Coordination of livestock grazing use and management of other Forest resources is a major emphasis item in this plan. Coordinated management of all resources will result in the achievement of the range objectives as well as the objectives of other resources. An example of such coordination is in the streamside/riparian areas. This plan will permit grazing in such areas, but the grazing will be monitored and managed to promote establishment and maintenance of a healthy, natural riparian vegetative cover within the streamside zone. Another example would be use of livestock as a tool to control competing vegetation to meet silvicultural objectives.

Some of the existing allotment management plans are outdated. In order to meet the projected outputs called for in this Forest Plan, all of the plans will require reanalysis or updating. Through full implementation of the allotment plans and permittee commitment, the projected livestock numbers will be achieved, and other outputs, such as improved range conditions and enhancement of other resources, will be attained. The allotment plans contain schedules for structural improvements, such as fences, and non-structural improvements, such as noxious weed control. A schedule of allotment needs can be found in Appendix A of this plan, under implementation schedules for range resources. This detailed schedule in each allotment plan will be updated periodically to reflect changes resulting from the reanalysis of allotments.

The first priority for noxious weed control will be prevention. Populations of noxious weeds will be monitored and treated according to the Mt. Hood Noxious Weed Management Plan.

The final step in meeting the range objectives of this plan will be accomplished by monitoring the range management program. The monitoring requirements are found in Table Five-2 in Chapter V.

Timber Management

Objectives for the timber resource are to produce a continuing supply of wood products, maintain an even flow of harvest and to provide a positive economic return to the government.

The average ASQ for the next decade will be approximately 31.9 MMCF (189 MMBF) per year.

Suitability

Timber harvest is scheduled from approximately 389,000 acres of suitable Forest land. Table Four-2 is a summary of the Forest timberland classification.

Lands not appropriate for timber production include approximately 287,000 acres assigned to Management Requirements and multiple use concerns and approximately 3,000 acres that are economically inefficient.

The economically inefficient portions of the lands not appropriate for timber production may become appropriate at such time that demand for the timber materializes.

Table Four- 2 Timberland Classification

Classification	Acres
Non-Forested (includes water)	114,533
Forest land	948,917
Forest land withdrawn from timber production	168,897
Forest land incapable of producing industrial wood	N/A
Forest land physically unsuitable	
irreversible damage likely to occur	20,880
regeneration difficulties	80,698
Forest land - inadequate information	0
Tentatively suitable Forest land	678,442
Forest land not appropriate for timber production	290,489
Unsuitable Forest land	560,489
Total suitable Forest land	388,428
Total National Forest land	1,063,450

Productivity

Timber productivity classification is shown in Table Four-3. According to the 1986 timber inventory, average growth on the Forest is approximately 76 cubic feet per acre per year for trees 9 inches DBH to a 6-inch top.

Table Four-3 Timber Productivity Classification

Potential Growth (cubic ft/acre/yr)	Tentatively Suitable Lands(acres)	Unsuitable Lands (acres)
Less than 20	0	0
20 - 49	17,336	3,265
50 - 84	151,670	79,467
85 - 119	332,661	114,513
120 - 164	176,776	73,210
165+	0	0
Total	678,442	270,475

Allowable Sale Quantity

The allowable sale quantity (ASQ), expressed as an annual average, is 31.9 MMCF or 189 MMBF. In addition, there are about 4.5 MMCF (26.0 MMBF) of sawtimber and convertible products that are defective or too small to be included in the allowable sale quantity. Table Four-4 displays the allowable sale quantity and the timber sale program quantity on an annual basis.

Approximately 37% of the Plan ASQ is composed of volumes coming from areas that are environmentally sensitive or controversial. If the volume in these components are not fully achievable over time, it cannot be made up on other areas of the Forest.

Table Four-4 Allowable Sale Quantity and Timber Sale Program Quantity (Annual Average for First Decade)

Harvest Method	Sawtimber (MMCF)
Regeneration Harvest	
Clearcut	23.4
Shelterwood and seed tree:	
Preparatory cut	2.7
Seed cut	5.8
Removal cut	0
Selection	0
Intermediate Harvest	
Commercial thinning	0
Salvage/sanitation	0
Subtotal (Allowabe Sale Quantity)	31.9[1]
Additional Nonchargeable Sales[2]	
Sawtimber	3.8
Other Products	0.6
Subtotal (Nonchargeable Volume)	4.4
Total (Allowable Sale Quantity	31.9 (189 MMBF)
Total (Timber Sale Program Quantity)	36.4 (215 MMBF)

[1] *Includes only chargeable volume from suitable lands.*

[2] *Includes only nonchargeable volume from all lands.*

Table Four-5 translates the allowable sale quantity (from Table Four-4) into acres of annual activity. Approximatly 2,900 acres of regeneration harvest is expected each year.

Table Four-5 Vegetation Management Practices
(Annual Average in First Decade)

Practice	Acres
Regeneration Harvest	29,400
Clearcut	21,500
Shelterwood and seed tree	
Preparatory cut	2,600
Seed tree	5,300
Intermediate Harvest	0
Timber stand improvement	21,700
Reforestation[1]	29,400

[1] *Includes natural and planted regeneration.*

Selection of practices (Table Four-5) is a function of the stand conditions and the Management Area goals. Both Tables Four-4 and Four-5 are estimates and may be adjusted based on final field examination. An activity schedule is included in Appendix A.

Over the long term, the allowable sale quantity is the base schedule. The long-term sustained yield capacity (LTSYC) is the base sale capacity able to be sustained over the full planning horizon, in this case fifteen decades. The ASQ is 100% of the LTSYC.

Present and Future Stands

Table Four-6 presents estimates of timber volumes for the present and future Forest growing stock. Standing volumes will be decreased by 9% but growth will increase by 25% as more managed stands are created.

Table Four-6 The Forest Today and In Fifty Years

	Unit of Measure	Suitable	Unsuitable	Total
Present Forest				
Growing Stock	MMCF	2,620	3,835	6,455
	MMBF	14,793	21,650	36,443
Live Cull	MMCF	437	640	1,077
	MMBF	2,467	3,611	6,078
Salvable Dead	MMCF	91	133	224
	MMBF	518	752	1,270
Annual Net Growth	MMCF	24	35	59
	MMBF	133	195	328
Annual Mortality	MMCF	158	231	389
	MMBF	896	1,306	2,202
Future Forest in Fifty Years				
Growing Stock	MMCF	2,385		
Annual Net Growth	MMCF	30		
Rotation Age Range	Years	110 - 150		

Table Four-7 Age Class Distribution on Lands Available for Timber Harvest

Age Class	Present Forest (acres)	Forest in Fifty Years (acres)
0 - 50	88,200	164,500
51 - 100	38,200	64,000
101 - 150	116,800	63,800
151 - 200	104,000	65,700
200+	41,300	30,500
Total	388,500	388,500

Tree Improvement Program

The Mt. Hood Interim Forest Tree Improvement Plan was signed in the spring of 1983; an updated program implementation plan should be produced by 1993. Updates and revisions will likely occur as seed needs change or cycles of improvement change.

The Tree Improvement Program goals for the Mt. Hood National Forest are threefold:

- Maintain genetic diversity of forest stands. Maintain the health of forest stands through genetic resilience, thus reducing the impact of disease, animal, insect, or climatic damage. Forest stands must contain within them the resilience to adapt to sudden catastrophic changes in their environment as well as to gradual climatic change.
- Increase net annual increment of usable wood fiber produced per acre of commercial forest land. Increase wood quality. The primary effect is to shorten time to culmination of mean annual increment.
- Produce genetically improved seed for reforestation of particular tree species.

The basic idea of tree improvement is to determine which qualities or traits are controlled by heredity and can be passed on to a tree's offspring. Examples of such traits include fast growth, disease resistance, stem form, and wood properties.

The four main parts of the Tree Improvement Program are:

- Phenotypically selected trees.
- Evaluation plantations.
- Seed orchards.
- Selective breeding.

In the first part of the program, trees are selected throughout the forest based on their phenotype or outward appearance for such traits as fast growth, good stem form, ability to produce cones, and resistance to insect damage or disease, such as blister rust. These tree selections are made in a systematic manner so that the majority of the genetic populations on the Mt. Hood National Forest are sampled. Large numbers of trees are selected for each species in order to maintain genetic diversity. These *phenotypically selected trees* are the main source of reforestation seed until the seed orchards come into production.

The tree's phenotype can be the result of genetics, environment, or a combination of both factors. Growing and observing offspring from the tree's seed in an evaluation plantation can determine whether the tree's good appearance is due to genetics. The purpose, therefore, of an *evaluation plantation* is to measure the breeding value of a parent tree by the performance of its offspring. Growth measurements are analyzed to produce rankings of genetic value among parent trees in the test. This information identifies the best parent trees to use in a selective breeding program and also which trees have the most to contribute in a seed orchard.

The third part of the Tree Improvement Program is the *seed orchards*. A seed orchard is a plantation of clones and/or seedlings from selected trees, managed to produce reforestation seed. The seed orchards are intensively managed, mainly using agricultural methods, to produce cones and hence seed in the shortest possible time.

The fourth part of a tree improvement program is *selective breeding*. This involves controlled crosses or matings among the "best" parent trees in the breeding population based on genetic information from the evaluation plantations. The selection criteria for "best" individuals can be growth, disease resistence, frost hardiness, or other traits. A breeding population will always contain a large number of parent trees per breeding zone.

The selective breeding work will be done in the seed orchards and the evaluation plantations. The seed orchards will be thinned to the very best parents after all the breeding work is completed, thus comprising a smaller *production population.*

At this point, the second cycle of tree improvement begins, starting with testing of the seedlings which are the result of selective breeding, making selections among all the seedlings in evaluation plantations, establishing a seed orchard, doing selective breeding among individuals, and then thinning the orchard to the best individuals for seed production. Seedlings from the selective breeding in cycle two become the base population for the third cycle of tree improvement, and so on through recurrent cycles of tree improvement.

Table Four-8 displays the level of improvement by breeding zone and breeding intensity. A breeding zone is simply a land subdivision within a breeding block for which an improved population of a tree species is being developed. The physical boundaries for these zones are described in the Tree Improvement Plan.

Breeding intensity is grouped by three different levels: intensive, intermediate, and extensive. Intensive programs involve all the elements described above: evaluation plantations, seed orchards, and continued cycles of selection, testing, and crossing. For breeding zones for which fewer acres are planted per year, or breeding zones of lower site productivity, lower intensity or intermediate level programs can be designed. An intermediate program consists of parent tree selections and seed orchard establishment, as above, but no evaluation plantations are established. In this type of program, selections are made within "families" based on comparison plots within the seed orchard. The plots are thinned to the best individuals within families.

An extensive program is designed for tree species where few acres are planted per year and/or occupy the least productive acres on the forest. This program is based on the "mass selection" method of plant breeding in which phenotypic selections are made, the trees outplanted in an operational plantation, and the area thinned according to the desired trait of interest. Open-pollination among the remaining trees produces the seed needed for reforestation, and produces the seed which becomes the base population for the next cycle of tree improvement.

Expected benefits from a tree improvement program are:

- increased juvenile height growth
- increased survival of outplanted stock
- maintained or increased disease and/or insect resistance

In the Forest Plan managed yield tables, a 10% volume gain factor was used in all species zones for planting with genetically improved stock.

Table Four-8 Planned Levels of Improvement by Breeding Zone and Intensity

Breeding Zone		Breeding Intensity	
Species	Elevation (M Feet)		
Douglas fir (Westside)	1-2	Intensive	
Douglas fir (Westside)	2-3	Intensive	
Douglas fir (Westside)	3-4	Intensive	
Douglas fir (Westside)	4-5	Intensive	
Douglas fir (Eastside)	1-2	Extensive	
Douglas fir (Eastside)	2-3	Extensive	
Douglas fir (Eastside)	3-4	Extensive	
Douglas fir (Eastside)	4-5	Intermediate	
Noble fir (Westside)	2-3	Extensive	
Noble fir (Westside)	3-4	Intensive	
Noble fir (Westside)	4-5	Intensive	
Noble fir (Eastside)	3-4	Extensive	
Noble fir (Eastside)	4+	Extensive	
Ponderosa pine (Eastside)	1-2	Extensive	
Ponderosa pine (Eastside)	2-3	Extensive	
Ponderosa pine (Eastside)	3-4	Extensive	
Ponderosa pine (Eastside)	4-5	Extensive	
Western white pine (breeding zone combined with Gifford Pinchot N.F.)	All elevations	Intensive	
Pacific Silver fir (Westside)	3-4	Extensive	
Pacific Silver fir (Westside)	4-5	Extensive	
Subtotal Forest Programs	53-67		
Cooperative Programs			
Douglas fir	1.5 - 2.5	Intensive	Mid-Columbia Co-op, Hood River Ranger District
Douglas fir	2.5 - 3.5	Intensive	
Ponderosa pine	1.5 - 2.5	Extensive	
Ponderosa pine	2.5 - 3.5	Extensive	
Douglas fir	3 - 4	Intensive	Central Oregon Co-op, Barlow and Bear Springs Ranger District
Ponderosa pine	2 - 3	Intensive	
Ponderosa pine	3 - 4	Intensive	
		Intensive	

Minor species such as western larch and lodgepole pine are not listed but will likely be treated at the extensive level depending upon seed needs and seed availability.

Transportation Systems

The Engineering transportation systems resource program for this planning period will continue to plan, design and construct roads and capital investment projects including bridges to meet resource needs. Also included in this program is the continued maintenance of the transportation system. As planning processes move management areas toward their desired future condition, roads will be evaluated for their support to other programs and in some cases will be either closed for a period of time or completely re-vegetated.

Since most of the long term transportation network currently exists, the focus will shift from development to planning, managing and maintaining the existing network to meet changes in land uses. These changes will include managing for increased recreational traffic.

Partnerships between other resources will allow engineering to continue to focus on development projects, for example recreation projects like campgrounds and snow parks. Existing partnerships between resources will continue to develop and grow.

Travel and Access

During area analysis, Travel Management and Forest Access Plans will be developed. These plans implement standards and guidelines for specific land allocations. Public involvement is solicited for these plans. As individual plans are developed they are coordinated at the District level. They also will be coordinated at the Supervisor's Office. When implemented, they are submitted to the Supervisor's Office for coordination into the Forestwide Travel and Access Management Plan and associated map.

Recreation

The Mt. Hood National Forest is an urban forest which provides a mosaic of recreational opportunities, services, and natural settings that are accessible and appealing to the urban customer, as well as the traditional user. The Forest is a major provider of recreation opportunities which require large diverse areas of natural, forest lands. The Forest will be among the leaders in providing opportunities to experience and learn about natural environment, and cultural and historic heritage.

Guiding principles are to:

- Foster coordination among all partners who provide outdoor recreation activities and settings.
- Enable people to learn and grow in their outdoor experience.
- Integrate other resource objectives consistent with sound forest management.
- Be primary advocates and providers of outdoor recreation opportunities that are appropriate to a large natural forest setting.
- Be leaders in providing environmental education and outdoor recreation as part of urban outreach efforts.
- Seek bridging opportunities to tie local and State tourism strategies to the Forest mission.

Connect and network with community based organizations, programs, agencies and groups which sponsor outdoor recreation activities.

Mt. Hood National Forest Recreation Values:

- **Quality Facilities:** Construct, rehabilitate, protect, or restore facilities to a desired high quality level (a pre-determined standard). Operate and maintain facilities to meet customer expectations.

- **Day/Short-Term Use:** Emphasize short stay recreation opportunities. Examples: day use/overnight, day hiking, interpretive opportunities, viewing, driving, camping, etc..
- **Environmental Education and Interpretation:** Establish and maintain leadership in providing environmental education and interpretation for the Portland area, and other surrounding communities around the Forest.
- **Congressionally Designated Areas:** Place management emphasis on congressionally designated areas (i.e. Wilderness, Wild and Scenic Rivers, National Recreation Trails, Columbia River Gorge National Scenic Area).
- **Serving the Visitor:** Forest visitors are our guests and we are committed to serving them by maintaining clean and safe areas and facilities, providing visitor information in a courteous manner, and meeting their recreational needs.
- **Special Places:** Recognize the significance of both seldom-visited and popular special places. Identify and protect locally known areas. Showcase places of regional and national importance.
- **Dispersed Winter Recreation:** As the major provider of cross-country skiing, snowplay and snowmachine opportunities for the Portland metro area we will increase opportunities and provide a variety of quality experiences.

Forest strategy:

The biggest challenge the Forest must face is to meet the diversity of demand that exists and that will continue to grow. The Forest has made the decision of not trying to be all things to all people.

To resolve the issue of what opportunities the Forest can provide, a strategy has been developed that envisions our niche in providing a spectrum of outdoor recreation facilities, activities and settings. Four central themes have been chosen and focus on established or identifiable patterns of use (refer to Recreation, FEIS Chapter III) and foster their development. New facilities are incorporated into the existing recreation foundation and are designed to complement and in some cases expand the spectrum of use. However, since providing high quality sites, including developed and dispersed sites, and trails is a primary Forest recreation value, the focus in the first decade will be on rehabilitation and reconstruction of existing sites. A primary consideration for proposing a new site or trail will be coordination with the Oregon Statewide Comprehensive Outdoor Recreation Plan (SCORP) demand projections.

The key element to the Forest Strategy has been the identification of a variety of new and reconstructed recreation facilities (refer to Recreation Implementation Schedules, Forest Plan Appendix A). These sites are in essence an inventory of those outstanding opportunity settings on the Forest. It is not a census of all potential opportunities but a listing of those sites that have the best ability to produce a quality recreation experience.

Not all of these sites will be built. Some will be eliminated from all consideration because of conflicts with other resources or activities.

There are some elements of the strategy that are common to all themes and central to the Forest strategy. First, is the necessity to provide quality recreation facilities, including developed and dispersed sites. Each site must highlight, in its own way, a special setting. Appropriate site design and a scrupulous continuity of maintenance of these facilities are critical to achieving this quality. Second, site development must remain sensitive to and consistent with the overriding objective of preserving and enhancing the scenic, natural, cultural and historical resources that make the Forest the unique place that it is.

Developed Recreation

Recreational use will continue to be heavy at popular sites like the Timothy Lake area, Lost Lake, Trillium Lake, and the Clackamas River drainage. The possibility of expansion of a few popular sites may partially relieve overcrowding and excessive deterioration of resources and facilities.

Based on a forest developed site priority study, sites which are little used or not economical to operate may be closed. Existing facilities are improved to a standard level, and a limited number of popular sites are to be expanded. All facilities are operated at standard service level and are expected to be physically maintained over the planning horizon.

During the past decade the Forest developed sites have been operating in a downward spiral. Maintenance has not kept up with the deterioration of facilities. In order to protect the public's investment in the Forest's developed sites, the Forest plans to complete the identified backlog of developed recreation rehabilitation needs in the first decade. Some new sites may be constructed towards the end of the decade. Any new sites should be coordinated with SCORP demand projections and coincide with the high and medium growth activities.

Developed campgrounds and other developed sites will continue to be offered for operation by concession. The potential to operate specific sites by concession shall be evaluated in terms of the costs and benefits to the Government. Contracting some essential services associated with developed site management, such as garbage collection and sewage disposal, shall continue.

The volunteer and hosted human resources programs are an important component of the developed recreation program under this Plan. Continuation of the campground host program, federal assistance programs, and community service groups are necessary under this Plan to provide the expected quality of visitors' recreation experience.

Developed portions of Winter Recreation Management Areas are managed through approved master plans and special use permits. The proximity of the developed ski facilities to the Portland metropolitan area forecasts increased use of these sites. Proposed expansions that exceed the scope of the existing master plan or permit shall require a new or revised master plan coordinated by the proponent when this is possible. Any proposed expansion of winter sports facilities shall also require coordination with the Oregon State Highway Department to assess its effects on Highway 26.

Management of other types of developed recreation such as recreation residences, organization camps, resorts, and restaurants continues under special use permits. No new recreation residence tracts shall be developed, and any other proposed development should be evaluated on a case by case basis.

Dispersed Recreation

Most dispersed recreation on the Forest continues in a roaded setting. Approximately 78 percent of the total dispersed recreation use occurs in the roaded natural and roaded modified classes. An additional 8 percent of the dispersed use occurs in rural settings. Less than 4 percent of recreation use under this Plan occurs in semi-primitive, nonmotorized and motorized settings. Total dispersed recreation uses associated with an unroaded setting, primitive and semi-primitive, nonmotorized classes is not expected to exceed 5 percent of the total recreation use on the Forest.

Identified backlog rehabilitation needs for facilities associated with dispersed areas are planned to be completed the first decade. As with developed recreation, any new sites planned should be coordinated with SCORP demand projections and coincide with high and medium growth activities.

This Plan provides adequate opportunities for roaded, dispersed recreation including driving for pleasure, viewing scenery, gathering forest products, and short hikes. Through transportation planning and other management activities, opportunities to improve or establish appropriate scenic views may be developed. The Forest's proximity to major population centers suggests that activities associated with day-use will remain dominant. There are some small, minimally improved facilities presently existing on the Forest that are available for either day or overnight use.

"Special Places" are an important recreation resource on the Mt. Hood NF. They are essentially those places on the Forest that people "hold dear." They range in size and type from roadside campsites of less than an acre to a Wilderness Area of several thousand acres. This Plan attempted to address the large or macro-site special places through land allocations. The micro-site special places are much more difficult to identify and manage.

The following process should generally be followed to identify, inventory, and monitor special places during the Area Analysis process:

Scoping

During the initial scoping of ICOs, the following sources of information should be recognized:

- The District list of site-specific comments to the draft Forest Plan and DEIS.
- District employee knowledge of sites and recreation patterns.

Public Involvement

- Utilize public meeting, mailings, and notices to identify special places.
- Conduct informal user surveys to identify recreation preferences and needs.

Inventory

- Conduct Code-A-Site (Hundee et al. 1976) on similar type inventories on sites to determine current status, and potential effects of future use and management on the special place.

Data Base

- Enter known sites into a database.

Monitoring

- Conduct Code-A-Site inventory following the management activity to determine changes over time. Conduct inventory on a random sample of sites. A one percent change in ASQ over a five-year period should trigger an assessment.

Management Prescription

- Develop a management prescription for each site identified that may be affected by the proposed activity.

Trails

The Forest has approximately 1,300 miles of recreation trails to complement other forms of dispersed recreation activities. The trail system includes 176 miles managed for cross-country skiing and snow machine use. Of the hiking trails, 268 miles are in Wilderness.

Use of the Forest trail system is projected to increase. Users will probably include both day and overnight visitors. A variety of opportunities for year-round hiking is available under this Plan. The Forest will continue to manage its trails for a range of opportunities according to difficulty, time of travel, and distance.

A Forest Trail Implementation Plan will be developed in the first decade following the guidelines established in the Trail Management Handbook (FSH 2309.18). As a minimum, the Plan will identify:

- Standardized trail maintenance schedules, and budget needs by trail segment, management area and/or entire trail.
- Reconstruction/construction needs for trails, trailheads, and snow parks.
- User participation process for trail planning, maintenance and monitoring.

If the necessary funding is available, the majority of identified trail reconstruction backlog is planned to be eliminated in the first decade. 305 miles of trail reconstruction is projected compared to 66 miles of construction. Based on projected budget needs, approximately one-half of the total trails budget is planned for operations of the trails and to provide routine maintenance once the trails and trail structures have been improved to an acceptable level of management. The planned miles of reconstruction and construction in the first decade focus on both the repair of trail structures, and trail work to correct the backlog of inadequate trails currently existing.

In the second decade, when the majority of backlog trail reconstruction has been completed, the focus (not including maintenance) will be on reconstruction, rehabilitation and replacement of trails and/or trail structures that are beyond the control of maintenance. This includes, but is not limited to, storm damage, bridge replacement, slump/landslides, and trail tread deterioration due to large amounts of use. In addition, construction of new trails will occur as determined by the Forest Trail Implementation Plan.

Wilderness

The Mt. Hood, Columbia, Salmon-Huckleberry, Bull-of-the-Woods, Badger Creek, and the Forest's section of the Mt. Jefferson Wilderness is maintained and managed as Wilderness. Wilderness management emphasizes not only the preservation of the areas' primitive characteristics, but also the restoration of a more primitive character to popular sites and other areas which have lost some of their Wilderness values through overuse.

The Wilderness Action Plans (Forest Plan Appendix C) provide additional information specific to each Wilderness. These plans shall be utilized in implementing the management area direction described in the A2 Wilderness Management Area prescription.

Although management should gradually restore overused Wilderness destinations to more primitive conditions, this Plan anticipates that recreational use of Wilderness will continue to concentrate in the most popular locations. The Forest plans to complete the identified backlog rehabilitation needs for Wilderness by the end of the first decade. Opportunities for a primitive recreation experience within Wilderness should continue to be available for the next several decades. Areas adjacent to the Columbia Wilderness are managed to preserve opportunities for solitude within the Wilderness.

Unroaded Areas

Manage the Forest's unroaded areas to provide a range of recreation opportunity spectrum settings, fish and wildlife habitats, and watershed conditions, recognizing that unroaded areas are allocated to a variety of Management Areas. Manage certain areas to protect the overall roadless character regardless of the Management Area allocation.

The Forest is maintaining the roadless character of approximately 81,100 acres of Roadless Areas. These acres are distributed among the Lake, Eagle, Mt. Hood Additions, Wind Creek, Salmon-Huckleberry, Roaring River, and Twin Lakes areas. These areas are allocated to a variety of A-type Management Areas which should protect their roadless character.

It is the Forests intent to maintain the roadless character of the 81,100 acres, plus the Bonney Meadows/Boulder Creek area regardless of the current land allocations. For example, the Twin Lakes area is allocated to A-5 Unroaded Recreation, A-8 Norther Spotted Owl Habitat Area, and A-11 Winter Recreation. The roadless character of the A-11 will be lost; however, the roadless character of the portion allocated to A-8 and A-5 should be maintained.

Wild and Scenic Rivers

This plan addresses two components of the Wild and Scenic River System. First, through Management Area direction, it identifies protection measures for five Congressionally designated Wild & Scenic Rivers (Table Four - 2). Second, it identifies portions of 10 rivers as eligible for inclusion into the Wild and Scenic River system (Table Four - 3).

The designated rivers will have individual management plans completed by the end of fiscal year 1992. One objective of the management plan will be to finalize the interim boundary identified in the standards and guidelines. Management will utilize the limits of acceptable change process to determine carrying capacities for each river.

Suitability studies for the eligible rivers will be completed by the end of fiscal year 1994. In the interim, the outstandingly remarkable values, free-flowing nature, potential classification, and scenic quality will be protected through Forestwide standards and guidelines. Those river segments found suitable will continue to be protected until Congress acts on the designation recommendation. Those river segments found not suitable will be released for other resource management objectives.

Table Four - 9 Designated Wild And Scenic River Segments

River Segment	Segment*	Length* (miles)	Classification
Clackamas	1	4.0	Scenic
	2	3.5	Recreational
	3	10.5	Scenic
	4	9.0	Recreational
	5	5.5	Scenic
	6	14.5	Recreational
Roaring	1	13.5	Wild
	2	0.2	Recreational
Salmon	1	7.0	Recreational
	2	15.0	Wild
	3	3.5	Recreational
Sandy	1	4.5	Wild
	2	7.9	Recreational
White	1	2.0	Recreational
	2	13.6	Recreational
	3	6.5	Scenic

**River segments and mileage are those on the Mt. Hood National Forest.*

Table Four - 10 Eligible Wild and Scenic Rivers (See FEIS Appendix E)

River Segment	Segment	Length (miles)	Potential Classification
Middle Fork Hood River	1	4.7	Scenic
Zigzag River	2	9.0	Recreational
Eagle Creek (Clackamas Co.)	1	7.2	Wild
	2	1.1	Recreational
North Fork Clackamas	1	10.8	Scenic
	2	2.7	Recreational
South Fork Clackamas	2	4.2	Scenic
Fish Creek	1	13.5	Recreational
South Fork Roaring River	1	4.6	Wild
Oak Grove Fork Clackamas River	1	10.0	Recreational
Collawash River	1	11.0	Scenic
	2	6.8	Recreational
N. Fk. N. Fk. Breitenbush River	1	4.1	Scenic

Special Interest Areas

Table Four-11 identifies the Special Interest Areas designated under 36 CFR 294.1 for public recreation use, study, and enjoyment.

Table Four - 11 Total Special Interest Areas

	Acres
Barlow Tollgate	1
Columbia Gorge - Old Wagon Road	65
Little Crater Lake - Geologic Area	373
Olallie Lake Scenic Area	13,175
Oneonta Gorge Botanical Area	10
Barlow Road Historic District	5,945
Larch Mountain Recreation Area	45
Roaring River Scenic Area (including Mitchell Flats)	12,449
Lost Lake	949
Bagby Hot Springs	854
Sugar Pine Botanical Area	35
Squaw Meadows	774
Parkdale Lava Beds Geologic Area	854
Cloud Cap-Tilly Jane Historic District	1,486
Clackamas Lake Historic District	253
Stringer Meadows	110
Old Maid Flat	1,497
Total Acres in Special Interest	38,875

These Special Interest Areas will have implementation plans updated to bring them into conformance with the Special Interest Area standards and guidelines. These implementation plans will be written to address the unique qualities of each of the seventeen areas listed in Table Four - 4. These plans are to be the basis for formal recommendation as a Special Interest Area. Until each area has received final SIA designation, it will be managed substantially in its natural condition. (See A4 Special Interest Area Standards and Guidelines).

The limits of acceptable change system for determining carrying capacities for each Special Interest Area during the first decade of implementation of this Plan will be utilized.

Special features of each area will be protected. Any proposed development impacting an area must be analyzed for the potential effects on the entire area, not just the immediate surroundings of the project.

These Special Interest Areas presently provide visitors to the Forest the following range of ROS opportunities:

- Semi-primitive, Nonmotorized: 67 percent
- Semi-primitive, Motorized: 10 percent
- Roaded Natural: 23 percent

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Research Natural Areas

Research Natural Areas designated in this Land Management Plan include:

- Mill Creek
- Bagby
- Bull Run
- Bull Run Addition
- Big Bend Mountain
- Gumjuwac-Tolo

These are areas that are to be managed in a natural, undisturbed state for research, observation, monitoring and education. They are established to represent a particular type of ecosystem, as identified in the Oregon Natural Heritage Plan, and provide a baseline for biological diversity on the Forest.

The following process is used to establish RNAs:

- Sites are recommended to the Forest by agency personnel or any member of the public.
- Proposals are evaluated by the PNW Research Station and RNA committee, the Area Ecologist and the District Ranger. Boundaries and management conflicts are identified at this phase.
- A recommendation is made to the Forest Supervisor for or against establishment.
- The Forest Supervisor approves or disapproves the recommendation; if establishment is approved, the Forest Supervisor proposes a Forest Plan Amendment.
- An establishment report is prepared and forwarded to the Chief for approval.

After an RNA is formally designated, the Forest Supervisor is responsible for preparing a management plan that outlines what uses are to be allowed, and how the values for which the RNA is designated will be protected.

During implementation of this plan, establishment reports need to be completed for the Gumjuwac-Tolo, Big Bend Mountain and Bull Run Addition RNAs. Management plans need to be prepared for those aforementioned, plus Mill Creek Buttes, Bagby and Bull Run RNAs.

In addition, an inventory needs to be made of further potential areas for designation, based on the needs outlined in the Oregon Natural Heritage Plan.

Scenic Quality

Viewing forest scenery is one of the main reasons people visit the Mt. Hood National Forest. The maintenance and enhancement of scenic quality was one of the key issues considered in preparing this Forest Plan.

In the plan, approximately 18 percent of the forest will be managed in a natural condition where changes result from ecological processes. This meets the Preservation Visual Quality Objective.

Approximately 37 percent of the forest is allocated to management areas which will maintain a near natural appearance. Changes to the landscape will be either not apparent (Retention), or if apparent would not dominate over the natural character (Partial Retention).

Lands within view of 22 selected scenic travel routes (viewshed corridors) will be managed to achieve Retention or Partial Retention Visual Quality Objectives (VQO) in the foreground, and Partial Retention or Modification in the middleground. These are specified in the Forestwide Standards section of this Plan. These areas include all State and federal highways, most major forest roads, and major recreation use areas. Also included are lands visible from both Designated and Eligible Wild and Scenic rivers. In addition, all existing non-wilderness trails, or trail segments, are assigned a visual quality objective appropriate to the level of use.

Viewshed implementation guides will be prepared for each designated viewshed, on a priority schedule, over the next ten years (Appendix A).

The remaining 45 percent of the Forest is assigned a Visual Quality Objective of Modification. In these areas, alterations to the landscape may be obvious, and dominate the scene, but will be designed to blend with the forms, lines, colors, and textures found in the natural landscape.

There are currently areas of the Forest which exhibit scenic qualities lower than the desired future conditions specified in this plan. Opportunities to rehabilitate landscapes with undesirable visual impacts will be identified, planned and scheduled throughout the implementation period.

Monitoring will be conducted on a regular basis to ensure that the visual quality objectives are being met.

Visual management principles are described in National Forest Landscape Management, Volumes 1 and 2. Published handbooks within the Visual Management System include "Utilities," "Range," "Roads," "Timber," "Fire," "Ski Areas," and "Recreation". The visual management system will also be applied in Wilderness to maintain high scenic quality. All management activities will consider the effects on scenic quality, and will utilize the visual management system to achieve the visual quality objectives prescribed for the area.

The Existing Visual Condition inventory is expected to be updated at five year intervals, beginning in 1991. The Visual Sensitivity Levels inventory should be updated at 10 year intervals, beginnign in 1993. All Visual Resource inventories will be coordinated by the Forest landscape architect.

Cultural Resources

The primary goal of the Cultural Resource program is to preserve significant cultural resources for scientific study, public use, and enjoyment. By the end of the first decade, a comprehensive cultural resource management plan will be written to provide a framework to guide the inventory, evaluation, protection, and enhancement of the Forest's cultural resources. A computerized data base, to be completed by 1994, will be used to develop the Cultural Resource management plan. Forestwide standards, historic preservation laws, regulations, and established policies shall direct cultural resource management decisions.

Following the Forest's inventory strategy, cultural resource surveys shall precede all land exchanges and ground-disturbing projects. Training and educational opportunities at the district level will be stressed to enhance program efficiency. This will allow the program to address project-related surveys as an integrated part of multi-resource management. Non-project surveys will be instigated as appropriate to investigate specific areas that have the potential to add to the knowledge about the history of the Forest.

Areas such as Wilderness, Special Interest Areas, Research Natural Areas, and unroaded areas generally will not be extensively inventoried until the beginning of the second decade. The entire Forest should be inventoried after five decades. The inventory effort and all cultural resource discoveries during these inventories must be documented. This information should be used to refine the cultural resource inventory strategy used on the Forest. Roughly 30 percent of the Forest may require additional investigations due to the dense vegetation cover in the Cascades. Heavy emphasis will be devoted to post-project monitoring of surveyed areas to test the validity of the inventory strategy and ensure resource protection.

Cultural resources located during the surveys that may be affected by project activities must be evaluated to determine if they are eligible for acceptance into the National Register of Historic Places. Evaluations generated by project planning will usually concentrate on single resources, but it is impossible to view a property in isolation when assessing its significance. Therefore, efforts must be made to examine the local or regional context of the property, and to determine how it may be related to other properties within the same historic context and/or specified geographic areas.

Through the first decade, evaluations of cultural resources not associated with specific projects will occur only incidentally. When these evaluations are conducted, they should emphasize evaluations of thematic groups or historic districts. Significant cultural resources shall be nominated to the National Register, but such nominations are likely to occur only incidentally through the first decade and until the forest has been substantially inventoried. Register nominations should emphasize thematic groups or historic districts.

To facilitate public appreciation and understanding of the history of the forest, cultural resources will be interpreted when appropriate. Signing, brochures, pamphlets, and audio-video presentations will further enhance the forest visitors' experience. Special efforts will be made to provide information and interpretation for school children of all ages.

The breadth and depth of information about the history and prehistory of the Mt. Hood NF will be increased through scientific investigations and by excavations of archeological sites. This information will be published for the scientific community and summarized in popular publications.

Site management plans must be written for each National Register property, Register-eligible property and historic property under special use permit. These plans will state how the property must be used, outline the operation, maintenance, and betterment of the property, and identify the associated funding required. Permits for occupancy and/or use of federally owned structures must be reviewed to insure they contain stipulations or clauses sufficient to protect the resources involved. Cultural resource compliance shall be completed before permits are issued that authorize ground-disturbing activities. As funding becomes available, cultural resource sites and structures shall be protected and rehabilitated from non project related damage caused by people and/or nature. If damage occurs, cultural resources shall be rehabilitated.

A monitoring plan will be developed as part of the Cultural Resources Management Plan. This plan will insure that National Register properties, properties with research and/or interpretive values will be inspected on a regular basis for natural and/or human caused damage. A regular maintenance program will be part of this plan. Damage will be dealt with as prescribed by the Forestwide standards.

Forestwide Standards and Guidelines

Forestwide Standards and Guidelines describe the bounds and/or constraints within which all activities necessary to implement the Forest Plan must operate. The Forestwide Standards and Guidelines, in conjunction with Management Area Prescriptions (Section IV of Chapter FOUR), the Regional Guide for the Pacific Northwest Region (19) and the USDA - Forest Service Manual/Handbook System, provide "on-the-ground" management direction for implementing the Forest Plan.

Both Forestwide and Management Area Specific Standards and Guidelines are intended to be measureable, allowing Forest Managers and Forest users to objectively determine if each individual aspect of management direction is achieved. In some cases Standards and Guidelines are intended to be mandatory; in other cases there are greater degrees of flexibility. In all cases the Standards and Guidelines provide management intent for addressing the various resource needs and concerns.

Specific terminology used in the Standards and Guidelines identifies the type of management direction and degree of compliance required. Correct interpretation of the terms is critical to understanding the intent of the management direction. Each Standard and Guideline falls into one of three categories of management flexibility. Three "action" words are used to differentiate among the three categories, i.e. shall, should, and may:

Verb	Intent of Standard and Guideline
Shall	Action is mandatory!
Should	Action is required; however, case by case exceptions are acceptable if identified during interdisciplinary project planning environmental analyses. Exceptions are to be documented in environmental analysis (National Environmental Policy Act 1969) public documents.
May	Action is optional. May Standards and Guidelines are included to emphasize resource intent or to clearly describe that a practice is available for use.

The Standards and Guidelines section includes almost exclusively Standards and Guidelines; however, some additional content is included to clarify the Standards and Guidelines. Examples include (1) introductory statements to describe purpose at the beginning of some resource area sets of Standards and Guidelines, and (2) definitional or supplementary information considered necessary to understand the intent of the Standard or Guideline. This second category of additions are recognized as "notes" within the text.

Geology

A. Slope stability shall be maintained or improved by forest management activities. **FW-001**

B. Management activities shall be designed to not reactivate or accelerate earthflow areas (Map Map Four-1 Earthflows). **FW-002**

C. Management activities shall be designed so that active landslides (i.e. located during field reconnaissance) shall not be accelerated or enlarged. **FW-003**

D. On active landslides with slopes greater than 30 percent:

  1. Present forest stands should be maintained. Regulated timber harvest activities shall not occur. **FW-004** **FW-005**

  2. Natural drainage features should be maintained or improved. **FW-006**

  3. Road construction should not occur. **FW-007**

  4. If road construction is deemed appropriate (via environmental analysis):

     a. The affected site shall be stabilized. Examples of stabilization measures are: revegetation, recontouring of affected slopes, road closures and placement of drainage structures. **FW-008**

     b. Rock, soil or organic material shall not be sidecast in the construction or maintenance of roads or landings. **FW-009**

E. In debris slide/debris flow areas (i.e. typically small and localized, found during detailed project reconnaissance):

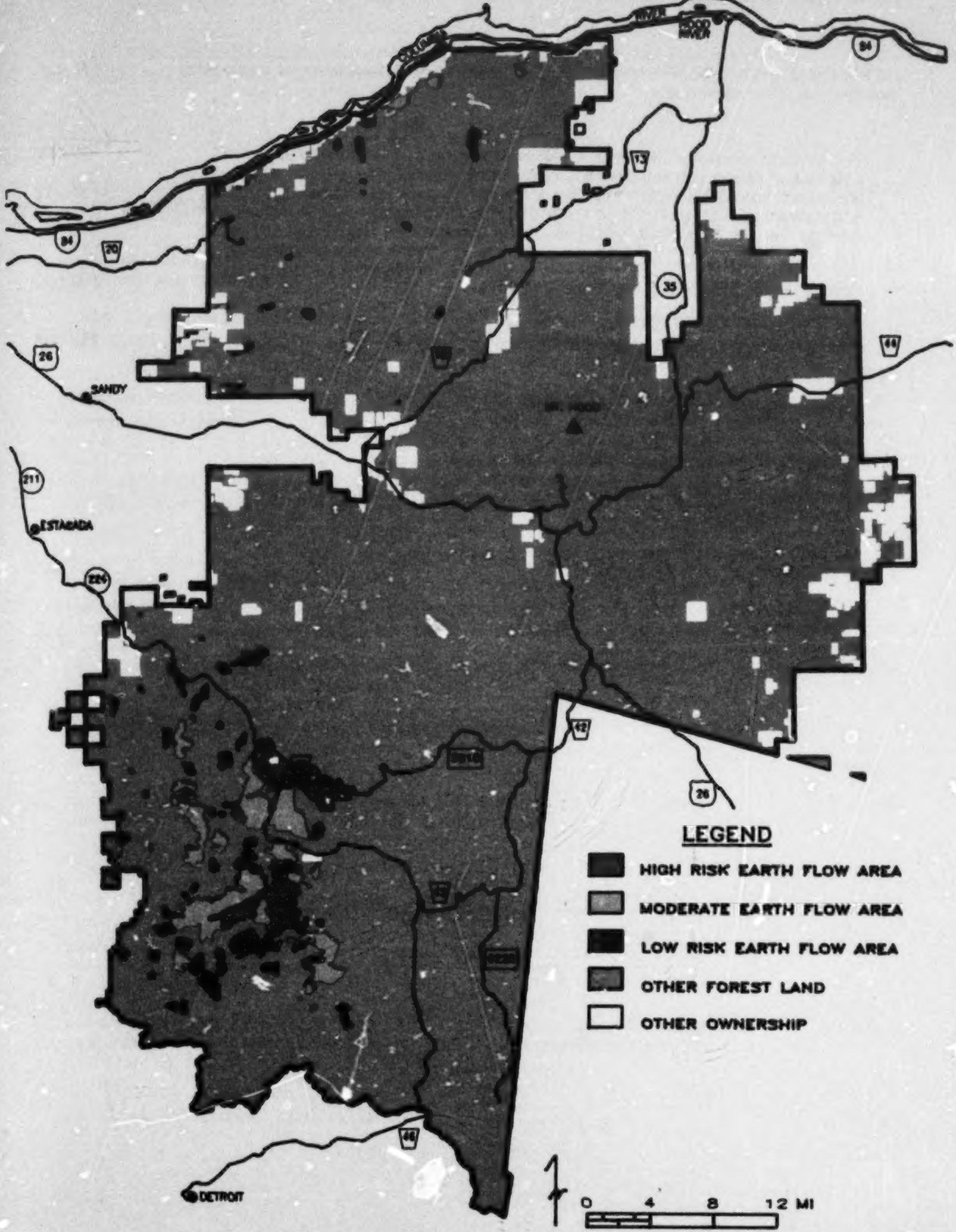
  1. Natural drainage features should be maintained or improved. **FW-010**

  2. Rock, soil or organic material shall not be sidecast in the construction or maintenance of roads or landings. **FW-011**

F. A geologic analysis shall be required for all actions in high risk geologic hazard areas (i.e. located during field reconnaissance). **FW-012**

G. Inventories of geologic stability shall be completed during project planning in the Collawash River drainage, Clackamas River drainage below Big Bottom, and within the vicinity of known geologically unstable areas (Map Four-1 Earthflows). **FW-013** Inventories of geologic stability should be completed in all other areas of the Forest during project planning. **FW-014**

Map Four-1 Earthflows


COLUMBIA
RIVER
HOOD
RIVER
84
84
30
13
35
26
SANDY
44
MT. HOOD
211
ESTACADA
224
42
26
46
DETROIT
LEGEND
HIGH RISK EARTH FLOW AREA
MODERATE EARTH FLOW AREA
LOW RISK EARTH FLOW AREA
OTHER FOREST LAND
OTHER OWNERSHIP
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4
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12 MI

H. Active landslides and debris slide/debris flow areas should be identified and stabilized. Emphasis shall be placed on stabilizing sites affecting fish-bearing streams. **FW-015** **FW-016**

I. On low risk earthflows (Map Four -1 Earthflows) possibilities of reactivating or accelerating movement shall be minimized. **FW-017**

1. The combined cumulated detrimental impacts, occuring from both past and planned activities, of detrimental soil compaction, puddling, displacement, erosion or severely burned soil should not exceed 8 percent of the activity area. Landings, non-transportation system roads, and dispersed recreation sites should be included within the 8 percent. See Forestwide Soil Productivity Standards and Guidelines. **FW-018** **FW-019**

2. Ground machine yarding of logs should not occur. **FW-020**

3. Natural drainage features should be maintained or improved. **FW-021**

Soil Productivity

The purpose of the following Standards and Guidelines is to protect and/or restore soil productivity throughout the Forest.

A. Soil Resource Protection

1. The combined cumulated detrimental impacts, occurring from both past and planned FW-022
activities, of detrimental soil compaction, puddling, displacement, erosion or severely
burned soil should not exceed 15 percent of the activity area. See Forestwide Riparian
Area and Geology Standards and Guidelines and B8 Earthflow Management Area
Standards and Guidelines. Landings, non-transportation system roads, and dispersed FW-023
recreation sites should be included within the 15 percent.

   Note: Activity area is the individual project area on which ground impacting activities are planned.

   Note: Developed recreation sites and transportation system roads are exceptions to this Standard and Guideline.

   Note: Detrimental compaction is defined as a 15 percent increase in soil bulk density, a 50 percent reduction in macropore space or a macropore space of 15 percent or less.

   Note: Soil is considered severely burned when the top layer of mineral soil is significantly changed in color (usually a reddish color) and the next one-half inch is blackened from organic matter charring due to heat conducted through the top layer.

2. Rutting within skid trails should not exceed 12 inches in depth over more than 10 percent of a designated skid trail system. FW-024

   Note: Rut depth is defined as the distance from the top of the natural soil surface to the base of the rut.

3. In the first year following surface disturbing activities, the percent effective ground cover by soil erosion hazard class should achieve at least the following levels: FW-025

Soil Erosion Hazard Class	Effective Ground Cover
Low to Moderate	60%
Severe	75%
Very Severe	85%

4. In areas where effective ground cover Standards and Guidelines cannot be achieved and on all road fill slopes, the affected site shall be stabilized or rehabilitated prior to the first autumn high rainfall period. FW-026

5. Sale or removal of topsoil should not be permitted. FW-027

B. Soil Rehabilitation

1. Following completion of project activities, if more than 15 percent of the activity area remains in an impaired (e.g. compacted, puddled, displaced or eroded) soil condition, rehabilatative techniques should be used to restore the soil resource to a level of less than 15 percent impaired. **FW-028**

2. Rehabilitation should occur within 1 year of project completion. **FW-029**

3. All logging skid roads should be considered for rehabilitation through deep soil tillage techniques. **FW-030**

C. Organic Matter

1. Future organic matter input into the soil system should be provided by maintaining adequate supplies (both temporally and spatially) of organic material necessary for short and long term ecosystem health. **FW-031**

2. Favorable habitat conditions for soil microorganisms should be maintained for short and long term soil productivity. **FW-032** At least 15 tons per acre of dead and down woody material in east side vegetation communities and 25 tons per acre in west side communities should be maintained and evenly distributed across managed sites. **FW-033** Coarse woody debris retained on site for wildlife habitat should be included in the tonage requirements (see Forestwide Wildlife Standards and Guidelines). **FW-034**

   a. Exceptions to this Standard and Guideline may occur within: **FW-035**

      1) Retention and partial retention near foreground (i.e. 200 feet) areas within B2 Scenic Viewsheds.

      2) A10 Developed Recreation, e.g. campgrounds and Zigzag area Summer Homes.

      3) A11 Winter Recreation Areas, i.e. down hill ski slopes.

   b. On sites which naturally produce less dead and down woody material than 15 tons per acre on the east side and 25 tons per acre on the west side, at least 80 percent of naturally occurring levels should be maintained. **FW-036**

3. Potentially ground disturbing management activities shall be designed to limit disturbance of the soil organic horizon (i.e. litter and duff). **FW-037**

4. When prescribed fire is used for site preparation, consumption of the surface organic horizons (i.e. litter and duff layer) should not exceed 50 percent of natural depths within the fire treatment area. **FW-038**

Air Quality

A. Effective working relationships with local, State and Federal air quality regulatory agencies, as well as, other State and Federal Land Management agencies, shall be maintained to assure current understanding of proposed industrial activities. Examples of coordinating agencies include: Environmental Protection Agency, Oregon Department of Environmental Quality, Oregon Department of Forestry, Washington Department of Ecology, and Washington Department of Natural Resources. **FW-039**

B. Management activities shall comply with all applicable air quality laws and regulations, including the Clean Air Act (1977 and any updates or revisions) and its associated Oregon State Implementation Plan. **FW-040**

   1. Management activities shall comply with the Oregon State Smoke Management Plan. **FW-041**

   2. Federal, State and local regulations for facilities management shall be applied. **FW-042**

   3. Appropriate State performance requirements on emitting facilities for permitted activities that could affect air quality, e.g. mineral, oil, gas or other developments, shall be incorporated. **FW-043**

C. Planning

   1. Forest management activities that could permanently degrade air quality shall consider the cummulative effect of Forest and non-Forest activities through application of the Clean Air Act (1977) and where applicable, the Prevention of Significant Deterioration regulations (contained in the Clean Air Act). **FW-044**

   2. Major Federal actions shall consider air pollution impacts. **FW-045**

D. Forest resources in non-Class I airsheds shall be protected from the effects of air pollution based on the guidelines for Class II airsheds (Clean Air Act 1977). **FW-046**

E. Air quality related values within Class I airsheds, e.g. portions of the Mt. Hood Wilderness and all of the Mt. Jefferson Wilderness on the Mt. Hood National Forest, shall be protected from the effects of air pollution. **FW-047**

F. Ecosystem Management

   1. The role and potential of fire as an integral part of the forest and rangeland environment shall be considered in obtaining multiple-use forest management objectives. **FW-048**

      a. Prescribed burning should be considered for use in meeting management objectives in areas where ecological studies show that natural fire has played a significant role in ecosystem development (Regional Guide for Pacific Northwest Region, 1984). **FW-049**

b. Prescribed burning may be used when analysis indicates that it will be effective and feasible. Analysis shall include consideration of measures to mitigate impacts on air quality. FW-050 FW-051

2. Impacts of prescribed burning on smoke-sensitive areas (e.g. Federal Class I airsheds and areas designated in the Oregon State Smoke Management Plan) shall be minimized. FW-052 Total particulate emissions shall be reduced consistent with goals set by the Oregon Department of Environmental Quality. FW-053

Water

A. Protection of Water Quality and Application of Best Management Practices

1. Water quality associated with management activities shall be in compliance with Oregon State requirements (Oregon Adminstrative Rules, Chapter 340-41) established in accordance with the Federal Clean Water Act (1977, amended 1987). See Forestwide Riparian Standards and Guidelines. **FW-054**

2. Compliance with State requirements shall be met through planning, application, and monitoring of Best Management Practices FEIS, (Appendix H). Best Management Practices (BMPs) describe the process which shall be used to implement the State Water Quality Management Plan on lands administered by the USDA-Forest Service. **FW-055** **FW-056**

3. Individual, general Best Management Practices which may be implemented (i.e. on a project by project basis) are described in General Water Quality Best Management Practices, Pacific Northwest Region, 11/88. Evaluations of ability to implement and estimated effectiveness shall be made at the project level. **FW-057** **FW-058**

4. The sensitivity of the project shall determine whether the site-specific BMP prescriptions are included in the environmental analysis, the project plan, or in the analysis files. **FW-059**

5. Management practices causing detrimental changes in water temperature or chemical composition, blockages of water courses, or deposits of sediment shall not be permitted (36 CFR 219.27 e). See Forestwide Riparian Area Standards and Guidelines. **FW-060**

B. Cumulative Watershed Effects

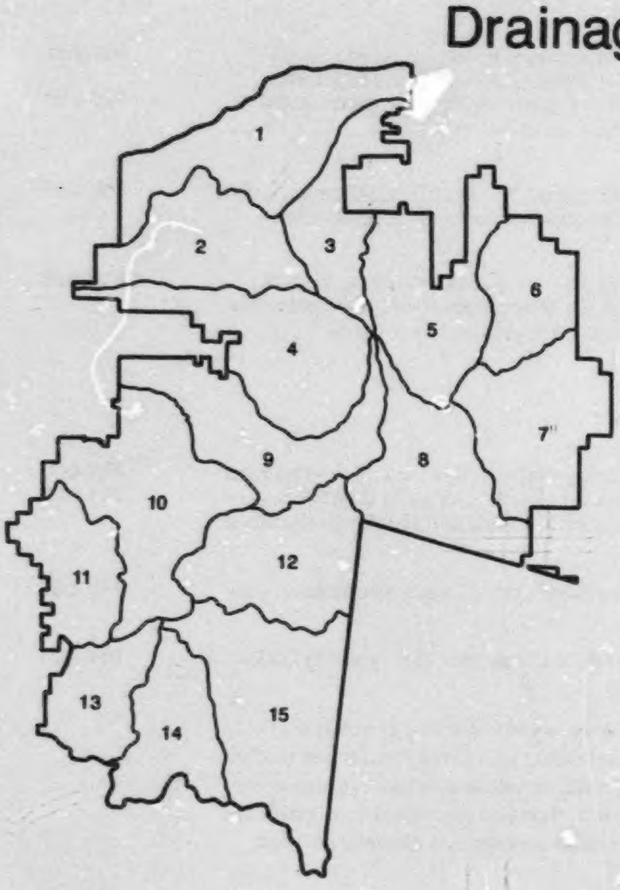
1. Vegetation management activities on National Forest System lands should be dispersed in time and space to minimize cumulative watershed effects. Not more than 35 percent of an area available for vegetative manipulation should be in a hydrologically disturbed condition at any one time. **FW-061** **FW-062**

    a. Within the 15 major drainages on the Forest (Map Four-2) watershed impact areas shall not exceed 35 percent. **FW-063**

    b. Watershed impact areas at the subbasin or area analysis level (i.e. typically 3000 to 6000 acres) should not exceed 35 percent. **FW-064**

    Note: "Watershed impact areas" represent areas within watersheds which are being hydrologically disturbed by management activities (e.g. timber harvest and road construction) and/or natural disturbances (e.g. wildfire and landslides). An area is considered a watershed impact area when it is not vegetated equivalent to a coniferous forest with a crown closure of 70 percent and an average tree diameter at breast height of eight inches.

Map Four-2 Major Drainages



Drainage

1 Columbia River
2 Bull Run River
3 West Fork Hood River
4 Sandy River
5 East Fork Hood River
6 Miles Creeks
7 Badger/Jordan Creeks
8 White River
9 Salmon River
10 Lower Clackamas River
11 Fish Creek, Molalla River
12 Oak Grove Fork Clackamas River
13 Hot Springs Fork Collawash River
14 Collawash River
15 Upper Clackamas River, Warm Springs River, Breitenbush River, Olallie Lake

2. Within selected "Special Emphasis Watersheds" (Map Four-3), watershed impact areas should not exceed the "thresholds of concern" (TOC) for watershed stability displayed in Table Four-12. **FW-065**

Table Four-12 Thresholds of Concern for Special Emphasis Watersheds

Special Emphasis Watershed	TOC (percent)
Alder Creek (City of Sandy Watershed)	25
Blister Creek	18
Clear Branch Hood River	18
Collawash River, Upper	18
Dog River, Upper (City of The Dalles Watershed)	25
Eagle Creek (Federal Fish Hatchery)	25
South Fork Eagle Creek (Federal Fish Hatchery)	25
Eightmile Creek	25
Fifteenmile Creek (City of Dufur Watershed)	25
Fish Creek	18
Fivemile Creek	25
Gordon Creek (City of Corbett) Watershed	18
Hot Springs Fork Tributaries (Collawash River)	25
Lake Branch Hood River	18
Mill Creek (City of The Dalles Watershed)	25
Pansy Creek	18
Ramsey Creek	25
Still Creek	25

See B8 Special Emphasis Watershed Management Area management direction.

Note: Map Four-3 displays entire Special Emphasis Watersheds regardless of overlapping Management Areas.

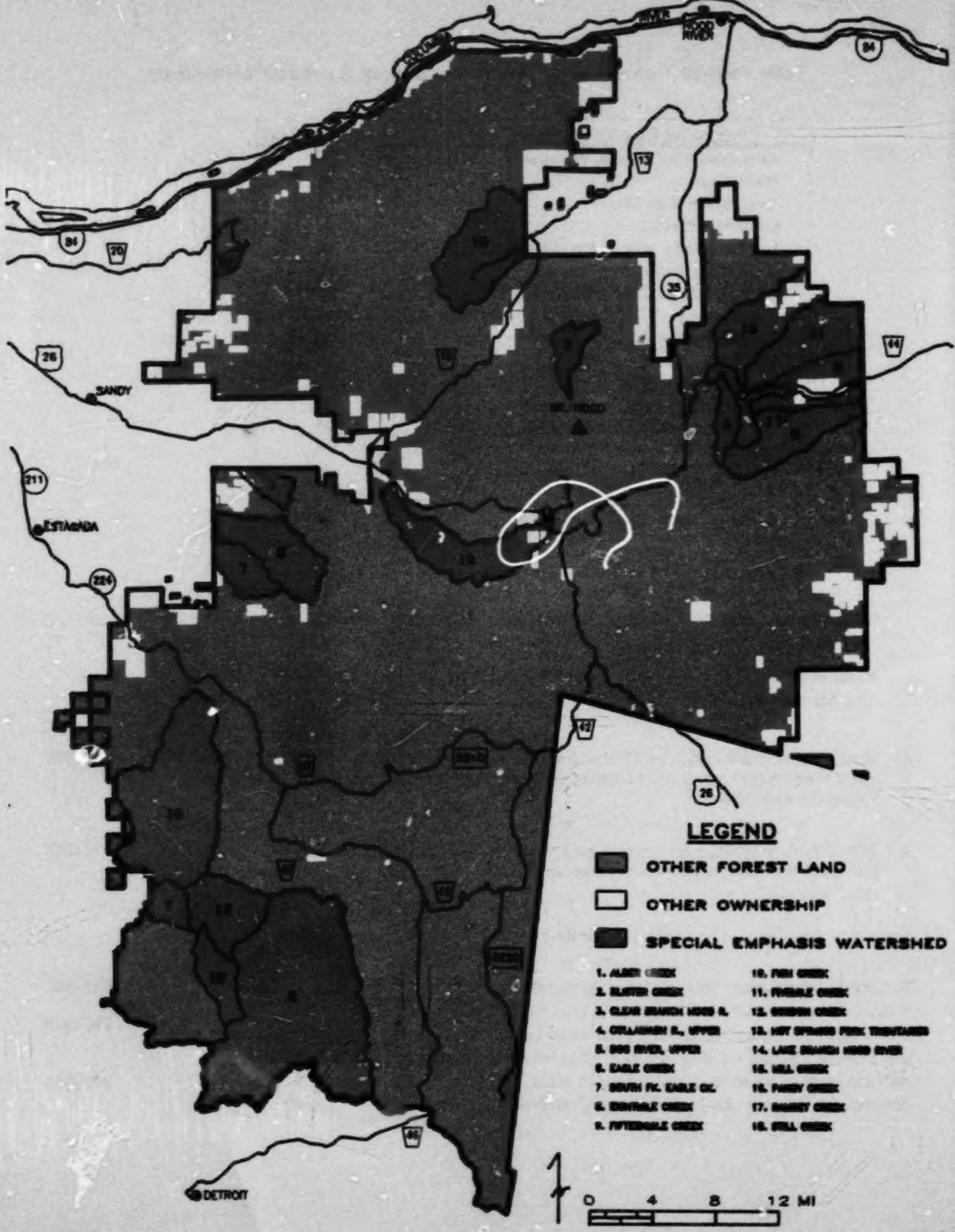
3. Cummulative effects analyses of management activities on water quality and/or stream channel stability (e.g. watershed impact analyses) shall include lands in all ownerships within the watershed. **FW-066**

4. Where land ownerships are intermingled, timber harvest scheduling should be coordinated to prevent adverse cumulative effects. **FW-067**

C. Water Resource Improvements (Watershed Restoration)

Watershed improvement projects (as identified during project analysis and/or in the Forest **FW-068**
Watershed Improvement Needs Inventory) shall be initiated to reduce sedimentation, to im-
prove water quality and to stabilize peak water flows. High priority projects should be those **FW-069**
that increase channel stability, improve effective stream shading, reduce sedimentation, and
stabilize areas of severe soil erosion and/or mass movement. Degraded areas with a high **FW-070**
potential for recovery shall receive the highest priority for treatment.

Map Four-3 Selected Special Emphasis Watersheds


HOOD RIVER
RIVER
84
35
26
SANDY
211
ESTACADA
224
MT. HOOD
42
26
46
DETROIT
LEGEND
OTHER FOREST LAND
OTHER OWNERSHIP
SPECIAL EMPHASIS WATERSHED
1. ALDER CREEK
2. BLISTER CREEK
3. CLEAR BRANCH HOOD R.
4. COLLAWASH R., UPPER
5. DOG RIVER, UPPER
6. EAGLE CREEK
7. SOUTH FK. EAGLE CK.
8. EIGHTMILE CREEK
9. FIFTEENMILE CREEK
10. FISH CREEK
11. FIVEMILE CREEK
12. GORDON CREEK
13. HOT SPRINGS FORK TRIBUTARIES
14. LAKE BRANCH HOOD RIVER
15. MILL CREEK
16. PANSY CREEK
17. [illegible] CREEK
18. STILL CREEK
0
4
8
12 MI

]

D. Riparian Ecosystems and Streamside Management Units

See Forestwide Riparian Area and B7 General Riparian Management Area Standards and Guidelines.

E. Domestic Water Use

1. Where legitimate domestic water uses occur within watersheds subject to management activity, an indepth field evaluation and determination of water quality protection needs should accompany any reclassification of stream Classes I - IV. **FW-071**

2. State and Federal water quality drinking water standards shall be met at all administrative and permitted facilities providing potable water. See Forestwide Administrative Sites and Special Uses Standards and Guidelines. **FW-072**

F. Water Use and Rights

Forest managers shall cooperate with the State on any water rights adjudications affecting National Forest System lands. **FW-073**

G. Instream Flow

1. Instream water flow on National Forest System lands (e.g. regarding proposed water uses, diversions, transmission applications and renewal of permits) should be protected through one or more of the following procedures: **FW-074**

    a. File protests with the State where water use applications are made that adversely affect National Forest resources.

    b. Assert claims for the water under Federal or State laws (where applicable).

    c. Include protection measures within the requirements of special use permits.

    d. Reach formal agreements over water use, e.g. Memoranda of Agreement.

    e. Determine minimum flow requirements in Forest Service project design.

H. Protection from Chemicals and Hazardous Materials

The disposal or accidental discharge of petroleum products and hazardous materials on National Forest System lands shall be prevented. Potentially detrimental materials associated with management activities (e.g. pesticides, fertilizers, and road surface treatments) shall be prevented from entering water or other areas not intended for treatment. See Forestwide Forest Protection Standards and Guidelines regarding Hazardous Materials. **FW-075** **FW-076**

I. Ground Water

1. Construction and management activities (e.g. leach fields, landfills, fuel storage, or mining activities) shall emphasize protection of groundwater quality. **FW-077**

2. Major groundwater recharge areas (e.g. floodplains, riparian areas, and intermittent and ephemeral drainages) shall be managed to maintain natural infiltration and permeability rates. See Forestwide Riparian Area and Soil Productivity and B7 General Riparian Area Standards and Guidelines. **FW-078**

J. Lakes, Reservoirs, and Ponds

The natural eutrophication (i.e. increase in nutrient supply) process of lakes, reservoirs, and ponds should not be accelerated by management activities. **FW-079**

Riparian Area

The following Forestwide Standards and Guidelines are intended to compliment the B7 General Riparian Area Management Area prescription. These Standards and Guidelines provide specific direction for different types of riparian area, e.g. stream classes, lake perimeters and wetlands. This management direction applies to riparian area inclusions within other Management Areas regardless of which category of Management Area surrounds the riparian area. See the B7 prescription for resource-specific Standards and Guidelines.

A. The following Standards and Guidelines are applicable to all riparian areas (Class I-IV streams, lakes and reservoirs, wetlands, seeps, and springs), except as noted. See B7 General Riparian Management Area Standards and Guidelines.

1. Within 100 feet of a riparian managment area, no more than 10 percent of a project activity area (e.g. timber harvest unit or recreation site) should have exposed or compacted soils. See Forestwide Soil Productivity Standards and Guidelines. **FW-080**

2. No more than 5 percent of a project activity area (within a riparian area) shall be in a compacted, puddled, or displaced soil condition. **FW-081**

3. At least 95 percent ground cover (e.g. vegetation, duff or litter) shall be maintained within all project activity areas (within riparian areas). **FW-082**

4. Ground disturbing activities should not occur in saturated soil areas. **FW-083**

5. Activities within and adjacent to riparian areas should not accelerate sediment delivery to streams, lakes, wetlands, seeps, and springs. **FW-084**

6. Water transmission corridors (e.g. irrigation ditches) under special use permit should not be considered riparian zones (see Forestwide Special Uses Standards and Guidelines). **FW-085** However, where irrigation water (under special use permit) is routed through natural (i.e. pre-special use permit) stream courses and/or riparian zones, riparian community management activities shall be consistent with riparian management direction (i.e. Forestwide Riparian Area and B7 General Riparian Management Area Standards and Guidelines). **FW-086**

B. Class I, II and Fish Bearing Class III Streams

1. Aquatic Habitat and Stream Channel Morphology

   a. Existing aquatic habitat complexity shall be maintained or increased. **FW-087**

   b. Pool habitat shall be maintained at natural levels or enhanced. **FW-088**

      1) Volume of pools during low water flows shall be maintained or increased. **FW-089**

      2) Gravel-dominated or low gradient (i.e. less than 3 percent slope) streams shall maintain one or more primary pools every 5 to 7 channel widths. **FW-090**

      3) Boulder/rubble-dominated or moderately steep gradient (i.e. greater than 3 percent slope) streams shall maintain one or more primary pools every 3 channel widths. **FW-091**

Note: Primary pools are those in-stream pools which occupy 50 percent or more of the low water flow channel width and have a maximum depth of at least 36 inches.

Note: Channel widths are measured at "full-bank" stream conditions.

c. In-channel Large Wood

1) At least 90 percent of potential and naturally occuring in-channel large woody debris (LWD) shall be maintained. Retention of multi-piece accumulations of LWD and fallen trees with attached root wads should be emphasized. FW-092 FW-093

2) An average of at least 20 pieces of suitable LWD per 1,000 lineal feet of stream should be maintained. Suitable LWD should meet the following dimensions: FW-094 FW-095

	Eastside	Westside
Minimum Length	35 Feet	50 feet
Minimum Mean Diameter	≥ 12 inches (80%)	≥ 24 inches (80%)
	≥ 20 inches (20%)	≥ 36 inches (20%)

d. Effective in-stream cover (e.g. boulders and floating material) should be maintained at natural levels on at least 90 percent of the riparian area that is providing or influencing fish habitat. FW-096

e. Spawning habitat (e.g. pool tailouts and glides) shall maintain less than 20 percent fine sediments (i.e. particles less than 1.0 millimeter in diameter) on an area-weighted average. The area considered within the average should include only the stream reaches available for vegetative manipulation (e.g. Wilderness areas should not be included). FW-097 FW-098

f. Riffle areas shall maintain less than 25 percent embeddedness on an area-weighted average. The area considered within the average should include only the stream reaches available for vegetative manipulation. FW-099 FW-100

g. Stream substrate shall be maintained such that at least 3 sediment sensitive macroinvertebrate species (typical of streams in the area) maintain densities of at least 200 individuals per square meter. FW-101

h. Streambank and/or shoreline stability of the riparian management area shall be maintained in its natural condition. If the existing streambank condition is degraded due to past management activities, the natural condition should be restored. FW-102 FW-103

i. Special aquatic habitat (e.g. alcoves, secondary and overflow channels, ponds and wetlands) and associated subsurface aquatic habitat (hyporheic zone) shall be maintained in natural condition or enhanced in both quantity and quality. FW-104

2. Terrestrial Habitat

a. At least 95 percent effective ground cover (e.g. adapted trees, shrubs, sedges, and grasses) in a project activity area should be maintained. FW-105

b. At least 80 percent of riparian management areas shall be maintained with, or restored to, a fully-stocked, multi-layered canopy of old growth and/or mature forest. FW-106

c. Dead and defective tree habitat (e.g. snags) sufficient to sustain over time at least 80 percent of the theoretical maximum biological potential of primary excavators (e.g. woodpeckers) should be maintained.

d. At least 90 percent of naturally occuring dead & down LWD pieces per acre (i.e. at least 40 cubic feet each) in varying stages of decomposition should be maintained. See Forestwide Wildlife and Forest Diversity Standards and Guidelines. FW-107

e. Non-forested riparian areas should be maintained. FW-108

3. Water Quality (Temperature and Sediment)

a. Summer water temperatures shall be maintained to protect existing on and off-Forest beneficial water uses (State Water Quality Standards, Oregon Administrative Rules, Chapter 340-410. FW-109

1) Forest management activities shall not cause water temperatures to: (1) exceed 58 degrees F. on any day, or (2) increase more than 2 degrees F. FW-110

2) Where natural maximum stream temperatures exceed 58 degrees F., forest management activities shall not cause any measurable increase in the maximum water temperature. FW-111

b. Stream shading should be increased where: FW-112

1) State water quality standards are routinely exceeded (e.g. annual occurrence) during summer low water flow periods.

2) Elevated water temperatures, due to managment activities, are likely to reduce on-Forest or off-Forest water related values.

c. State water quality standards for turbidity shall be met. No more than a 10 percent cummulative increase in natural in-stream turbidity should be allowed to result from forest management activities (Oregon Administrative Rules 340, Div. 41). FW-113 FW-114

4. Fish Passage

a. Fish passage should be maintained or improved. FW-115

1) All new road construction shall maintain or enhance fish passage (Oregon Revised Statute 509.605). FW-116

2) Human-made fish passage barriers should be identified and corrected. FW-117

b. See Forestwide Fisheries Standards and Guidelines.

C. Non-Fish Bearing Class III Streams

The following Standards and Guidelines apply to non-fish bearing, perennial streams which do not meet higher stream class (i.e. Class I and II) criteria as defined in FSM 2526.05.

1. Aquatic Habitat and Stream Channel Morphology

a. Pool habitat Standards and Guidelines shall be the same as Standards and Guidelines for Class I, II and fish bearing Class III streams, except the pool depth requirement of 36 inches does not apply. FW-118

b. Pools, both existing and potential, should be maintained to provide habitat diversity and to regulate the flow of debris through the stream system (e.g. diversity for aquatic organisms and terrestrial wildlife and streamflow energy dissipation). FW-119

c. In-channel large wood Standards and Guidelines shall be the same as for Class I, II, and fish bearing Class III streams except: **FW-120**

1) The minimum piece length of LWD should be two bankfull widths. **FW-121**

2) The number requirements (e.g. percentages) should be applied as average conditions for all non-fish bearing, perennial streams in a subdrainage (versus required for each stream). **FW-122**

2. Terrestrial Habitat

a. At least 90 percent effective ground cover (e.g. adapted trees, shrubs, sedges, grasses, and duff) shall be maintained. Non-forested riparian areas should be maintained. **FW-123** **FW-124**

b. Dead and defective tree habitat sufficient to sustain overtime at least 80 percent of the theoretical maximum biological potential of primary excavators (e.g. woodpeckers) should be maintained. **FW-125**

c. Trees necessary for sideslope stability, channel stability, long-term large wood input, and wildlife habitat diversity shall be maintained. **FW-126**

3. Water Quality (Temperature and Sediment)

a. Forest management activities shall not cause water temperatures to exceed water quality standards established for fish bearing streams (see Class I, II and Fish Bearing Class III Streams Standards and Guidelines). **FW-127**

b. Stream shading should be increased where: **FW-128**

1) State water quality standards are routinely exceeded (i.e. annual occurrence) during summer low water flow periods.

2) Elevated water temperatures, due to management activities, are likely to affect down-stream water related values.

c. Sediment loading shall be minimized and stream channel conditions maintained to meet State water quality standards for turbidity (see Class I, II and Fish Bearing Class III Streams Standards and Guidelines). **FW-129**

D. Lakes and Wetlands

1. Terrestrial habitat (floodplain/riparian vegetation) and water quality (sediment) Standards and Guidelines for lakes and wetlands shall be the same as the Standards and Guidelines for Class I, II, and fish bearing Class III streams. **FW-130**

2. Dispersed campsites should be discouraged within 100 feet of lake shores. **FW-131**

E. Class IV Streams, Seeps, Springs and Headwaters

1. Channel and bank stability should not be deteriorated beyond existing conditions and should be restored to natural conditions. Activities and practices which could result in ground disturbance such as rills, furrows, erosion, compaction, puddling, etc., should be minimized. **FW-132** **FW-133**

2. Maintenance of noncommercial trees should be encouraged. **FW-134**

3. Conifer and hardwood trees necessary for stream bank stability, long term wood input, and diversity of wildlife and plant communities should be maintained. **FW-135**

4. At least 100 percent of potential and naturally occuring large woody material (both quantity and quality) within seeps and springs or lying within or across the channels of Class IV streams should be maintained. **FW-136**

Fisheries

A. Fish habitat capability shall be maintained at existing levels or greater. **FW-137**

Note: Table III-10 in the FEIS displays existing fish habitat capability index values by river drainage and species.

B. Impacts on habitat for the management indicator species group (salmonids) shall be determined for each project affecting fisheries, in terms of habitat quality, quantity, and distribution. **FW-138**

C. Habitat Improvement and Maintenance

1. **Degraded fish habitat shall be improved through rehabilitation, and/or enhancement, project investments and adherence to riparian management direction (see Forestwide Riparian Area and B7 General Riparian Management Area Standards and Guidelines).** **FW-139**
2. **Development and recreational use of all lakes shall be coordinated to complement Oregon Department of Fish and Wildlife fish management objectives:** **FW-140**
    - a. **The nature and extent of facilities at all lakes shall be consistent with site-specific riparian objectives and prescribed recreational use levels.** **FW-141**
    - b. **Vehicle access should not be provided, or shall be restricted, within 1/2 mile of lakes designated for dispersed, non-motorized recreation (Road 4220 within Olallie Lake A4 Special Interest Area Management Area is an exception). See Table Four-13, "Walk In" Access Lakes.** **FW-142**

D. All water diversions from fish bearing streams shall have screening facilities to preclude fish access into the diverted water (Oregon Revised Statute 509.615). Exceptions to this Standard and Guideline may occur for localized fish habitat enhancement facilities. **FW-143** **FW-144**

E. Fish passage should be maintained or improved. **FW-145**

1. **All new road construction shall maintain or enhance fish passage (Oregon Revised Statute 509.605).** **FW-146**
2. **Human-made fish passage barriers should be identified and corrected.** **FW-147**

Table Four-13 "Walk-In" Access Lakes

Lake	Location	Ranger District
Anvil	T5S, R8E, S17	Clackamas
Averill	T9S, R8E, S4	Clackamas
Baldy	T3S, R8E, S28	ZigZag
Bear	T2N, R9E, 18, 19	Hood River
Boulder	T4S, R8E, 32, 5	Barlow
Brown, North	T8S, R8E, S27	Clackamas
Brown, South	T8S, R8E, S27	Clackamas
Buck	T5S, R8E, S30	Clackamas
Bump	T8S, R8E, S26	Clackamas
Catalpa	T4S, R9E, S14	Bear Springs
Cottonwood Meadows	T5S, R7E, S28	Clackamas
Cripple Creek	T5S, R7E, S28	Clackamas
Cub	T9S, R8E, S5	Clackamas
David	T9S, R8E, S8	Clackamas
Dinger	T5S, R8E, S9	Bear Springs
Donna	T9S, R8E, S10	Clackamas
Double Peaks	T9S, R8E, S9	Clackamas
Enid	T3S, R8E, S13	ZigZag
El	T9S, R8E, S2	Clackamas
Finley	T9S, R8E, S3	Clackamas
First	T9S, R8E, S2	Clackamas
Fish	T8S, R8E, S34	Clackamas
Frazier	T5S, R7E, S9	Clackamas
Gifford	T9S, R8E, S2	Clackamas
Gifford, Lower	T9S, R8E, S2	Clackamas
Head	T9S, R8E, S2	Clackamas
Hidden	T3S, R8E, S12	ZigZag
High	T9S, R8E, S6	Estacada
Huk	T8S, R8E, S27	Clackamas
Huxley	T4S, R8E, S28	Estacada
Indian, South	T9S, R8E, S16	Clackamas
Indian, North	T9S, R8E, S9	Clackamas
Jean	T3S, R10E, S17	Barlow
Jeni	T4S, R7E, S31	Estacada
Little Boulder	Ts4, R10E, S31	Barlow
Lower	T9S, R8E, S2	Clackamas
Memaloose	T5S, R8E, S31	Estacada
Mirror	T3S, R8E, S23	ZigZag
Nekbobets	T9S, R8E, S10	Clackamas

Lake	Location	Ranger District
Paste Creek Pond	T7S, R6E, S1	Clackamas
Plaza	T4S, R7E, S18	ZigZag
Pyramid	T5S, R7E, S11	Clackamas
Rainy	T2N, R8E, S25	Hood River
Red	T9S, R8E, S8	Clackamas
Rimrock	T9S, R8E, S10	Clackamas
Ring	T9S, R8E, S10	Clackamas
Rock, Lower	T5S, R7E, S8	Estacada
Rock, Middle	T5S, R7E, S8	Estacada
Rock, Upper	T3S, R7E, S17	Estacada
Salmon	T4S, R7E, S16	ZigZag
Sandstone Pond	T5S, R6E, S28	Clackamas
Serene	T5S, R7E, S7	Estacada
Sheep	T9S, R8E, S4	Clackamas
Shellrock	T6S, R7E, S17	Clackamas
Shining	T4S, R6E, S36	Estacada
Sluice Creek Pond	T7S, R6E, S1	Clackamas
Sorber Ponds #1 & 2	T6S, R6E, S2	Clackamas
Sportsman, East	T9S, R7E, S1	Clackamas
Sportsman, West	T9S, R7E, S2	Clackamas
Spud, Big	T9S, R8E, S4	Clackamas
Spud, Little	T9S, R8E, S4	Clackamas
Squirrel	T8S, R8E, S34	Clackamas
Surprise #1	T5S, R6E, S27	Clackamas
Surprise #2	T6S, R5E, S27	Estacada
Surprise #3	T8S, R8E, S22	Clackamas
Suzi	T4S, R7E, S31	Estacada
Tag Creek Pond	T6S, R7E, S18, 19	Clackamas
Tubb	T9S, R8E, S2	Clackamas
Twin Lakes	T4S, R8E, S49	Bear Springs
Upper Lake	T8S, R6E, S29, 30	Clackamas
Veda	T4S, R8E, S2	ZigZag
View	T9S, R8E, S14	Clackamas
Wall	T9S, R8E, S4	Clackamas
Warren	T2N, R8E, S16	Hood River
Wahtum	T1N, R8E, S10, 11	Hood River
Wendy Meadows	T5S, R8E, S21	Clackamas
Wind	T3S, R8E, S26	ZigZag
Yellow Jacket	T8S, R8E, S34	Clackamas

Forest Diversity

The National Forest Management Act of 1976 provides statutory direction for managing the National Forest System to provide for diversity of plant and animal communities (Section 6(g)(3)(B) of the NFMA). The following Standards and Guidelines are intended to help assure this direction is achieved.

A. Management activities shall preserve and enhance the diversity of plant and animal communities, including endemic and desirable naturalized plant and animal species. The diversity of plants and animals shall be at least as great as that which would be expected in a natural forest; the diversity of tree species shall be similar to that existing naturally in the planning area (36 CFR 219.27). **FW-148** **FW-149** **FW-150**

B. Species and Community Compositional Diversity

1. See Forestwide Wildlife and Fisheries Standards and Guidelines, as well as, all Management Area Standards and Guidelines.
2. Timber type conversions to non-native species shall be prohibited. **FW-151**
3. Silvicultural treatments should consider and emphasize methods allowing for a diversity of tree species, stand conditions and natural regeneration. Species planted shall be consistent with plant association-specific recommendations described in the following plant association and management guides: **FW-152** **FW-153**
    a. Plant Association and Management Guide for the Pacific Silver Fir Zone, Mt. Hood and Willamette National Forests, 1982.
    b. Plant Association and Management Guide for the Western Hemlock Zone, Mt. Hood National Forest, 1985.
    c. Plant Association and Management Guide for the Ponderosa Pine, Douglas-fir, and Grand Fir Zones, Mount Hood National Forest, 1988.
4. Tree thinning shall retain a diversity of tree species based on site potential, and shall encourage the continued presence of minor forest tree species. **FW-154** **FW-155**
5. Vegetation management activities shall not result in a permanent loss of any species native to a particular ecosystem. **FW-156**
6. Symbiotic nitrogen-fixing species, especially alder and ceanothus species, should be encouraged. **FW-157**
7. Fragmentation of old growth forest stands of substantial size (e.g. 100 acres) should be minimized based on the following measures: **FW-158**
    a. Harvest unit selection should favor existing isolated, relatively small blocks of Forest, e.g. leave strips less than 100 acres in size. **FW-159**
    b. Harvest units should be located minimizing fragmentation of large blocks of old growth by placing the harvest units on the margin of the large block. **FW-160**

8. Management activities shall contribute to recovery and conservation of Federally listed threatened or endangered species (Endangered Species Act, 1973; 36 CFR 219.19). See Forestwide Threatened, Endangered and Sensitive Plants and Animals Standards and Guidelines. FW-161

9. Habitat management should provide for the maintenance of viable populations of existing native and desired non-native wildlife, fish (36 CFR 219.19), and plant species (USDA Regulation 9500-4) well distributed throughout their current geographic range within the National Forest System. FW-162

C. Structural Diversity

1. A continuous supply of hard snags for community structural diversity shall be FW-163
maintained in harvested areas. At least 2 to 3 hard snags and 2 to 3 live trees per acre FW-164
should be retained in harvest units. Retention of Douglas-fir, western larch and
Ponderosa pine should be emphasized. See Forestwide Wildlife Standards and FW-165
Guidelines regarding biological potential for primary cavity nesting species.

2. A continuous supply of down woody material shall be maintained in harvested areas. FW-166

   a. Within westside-Cascade Forest communities, at least 6 large, hard logs per acre, each at least 40 cubic feet in size, should be retained in harvest units. See Forestwide Wildlife and Soil Productivity Standards and Guidelines. FW-167

   b. Within eastside-Cascade Forest communities, at least 3 large, hard logs per acre, each at least 40 cubic feet in size, should be retained in harvest units. See Forestwide Wildlife and Soil Productivity Standards and Guidelines. FW-168

3. Down logs, snags and green trees retained in harvested and managed areas should be maintained during Forest management activities, e.g. prescribed burning and firewood gathering. FW-169

4. See Forestwide Riparian Area and B7 General Riparian Management Area Standards and Guidelines.

Threatened, Endangered and Sensitive Plants and Animals

Additional management direction for northern spotted owl habitat and northern bald eagle habitat can be found in Management Area Standards and Guidelines for A8 Northern Spotted Owl Habitat Areas and A13 Bald Eagle Habitat Area.

A. The Forest shall cooperate with implementation of interagency species recovery efforts for **FW-170**
threatened and endangered species (i.e. northern bald eagle and American peregrine falcon).
The Forest shall consult with the USDI-Fish and Wildlife Service (USFWS) and cooperate **FW-171**
with Oregon Department of Fish and Wildlife and Oregon Department of Agriculture (e.g.
Oregon Natural Heritage Data Base) in developing Species Management Guides (FSM 2670)
and Forest Species Recovery Programs.

B. Bald eagle nesting, winter roosting and perching sites shall be protected consistent with A13 Bald Eagle Habitat Area Standards and Guidelines. **FW-172**

C. Perch trees within 200 feet of the shoreline of lakes or rivers used by eagles for hunting and feeding should be maintained. **FW-173**

D. Threatened, endangered and sensitive plants and animals shall be identified and managed in accordance with the Endangered Species Act (1973), the Oregon Endangered Species Act (1987), and FSM 2670. **FW-174**

E. Habitat for threatened, endangered and sensitive plants and animals shall be protected and/or improved. **FW-175**

F. Biological Evaluations (FSM 2672.4) shall be prepared for all Forest Service planned, funded, executed, or permitted programs and activities for possible effects on endangered, tthreatened or sensitive species. **FW-176**

G. Consultation with the USFWS shall occur on each program activity or project that the Forest **FW-177**
Service determines may effect threatened or endangered species. Consultation shall be **FW-178**
completed before any decision is made on the proposed project.

H. Species Management Guides shall be prepared, in accordance with Northwest Region species recovery plans, to address the effects of land management activities and identify opportunities to maintain or enhance habitat for plant and animal species which may frequently conflict with standard management practices. **FW-179**

I. Lists of threatened, endangered and sensitive plant and animal species shall be maintained and updated periodically as new information is collected. **FW-180**

J. Specific location information that could jeopardize the welfare of a threatened, endangered or sensitive species shall be restricted from general public access. **FW-181**

K. If habitat allocated for threatened, endangered or sensitive species protection or recovery (i.e. **FW-182**
A8 Spotted Owl Habitat Areas and A13 Bald Eagle Recovery Areas) is lost (e.g. due to
windthrow or wildfire), replacement habitat of equal or better quality (or the best available)
shall be designated and allocated. For A8 Management Areas, replacement habitat shall be **FW-183**
allocated if 30 acres or more habitat is lost. Replacement habitat should be located **FW-184**
immediately adjacent to the remaining A8 habitat.

L. Other resource values may be limited or precluded in localized areas to facilitate recovery efforts for threatened, endangered or sensitive species, e.g. rerouting or temporarily closing a recreation trail at a peregrine falcon release site. **FW-185**

M. Management activites and recreational use should be limited within 1/4 mile of active peregrine falcon nests between April 1 and July 31. **FW-186**

Wildlife

A. Deer and Elk

1. Key habitat areas (e.g. rearing areas, mineral licks, and wallows) should be protected. **FW-187**

2. Management population objectives for each project planning area shall be coordinated with Oregon Department of Fish and Wildlife. **FW-188**

3. Existing natural meadows/openings shall be maintained. **FW-189**

4. Logging slash should not impede deer and elk habitat use patterns. **FW-190**

5. Commercial thinning unit design should consider wildlife habitat objectives, e.g. defering treatment to provide for cover, diversity and size class diversity. **FW-191**

6. Forage areas created through timber harvest activites should be irregularly shaped; no portion of the forage areas should be more than 600 feet from cover. **FW-192** **FW-193**

7. As an effort to maintain stable deer and elk populations, a consistent quantity of foraging areas should be produced through timber harvest. A consistent acreage quantity of early successional plant communitites created by timber harvest activities should be encouraged in all decades. **FW-194** **FW-195**

    a. On lands available for timber harvest, the quantity of regeneration harvest activities in the first decade should be dispersed over each of the 15 Major Drainages (Map Four-2) on the Forest, as displayed in Table Four-14. **FW-196**

Table Four-14 Deer and Elk Forage Production per Major Drainage

The percentage ranges of lands suitable for timber harvest which should be harvested in the first decade are displayed by Major Drainage.

Major Drainage	Percentage Regenerated
Columbia Gorge	Not Applicable
West Fork Hood river	5 - 7
East Fork Hood River	5 - 7
Miles Creeks	3 - 5
Sandy River	9 - 11
Bull Run River	Not Applicable
Salmon River	7 - 9
White River	6 - 8
Badger-Jordon Creeks	8 - 10
Lower Clackaman River	9 - 11
Fish Creek/Memaloose Creek	1 - 2
Oak Grove Fork Clackamas River	8 - 10
Hot Springs Fork Collawash River	3 - 5
Collawash River	4 - 6
Upper Clackamas River	9 - 11

b. A consistent quantity of foraging areas per decade should be created through regeneration harvest at the area analysis level (i.e. typically 3000 to 6000 acre project planning areas). **FW-197**

8. At least 40 percent and 20 percent of all timber harvest units (i.e. regeneration and **FW-198**
commercial thinning) should provide nutritional forage enhancement for deer and elk on
inventoried winter range (Map Four-4) and summer range, respectively. Percentages **FW-199**
should be calculated at the analysis area level, i.e. approximately 5000 acres.

9. Timber harvest units should average 20 acres and 30 acres in size on winter range and **FW-200**
summer range, respectively. Average unit size should be calculated at the analysis area **FW-201**
level, i.e. approximately 5000 acres.

10. Optimal cover and thermal cover habitat components for deer and elk (measured at the area analysis level, i.e. approximately 5000 acres) should be maintained as follows: **FW-202**

    a. On inventoried Westside Cascade deer and elk winter range (Map Four-4) 20 percent should be optimal cover and 20 percent should be thermal cover. **FW-203**

    b. On inventoried Eastside Cascade deer and elk winter range (Map Four-4) 15 percent should be optimal cover and 20 percent should be thermal cover. **FW-204**

    c. On Westside Cascade deer and elk summer range 20 percent should be optimal cover and 10 percent should be thermal cover. **FW-205**

    d. On Eastside Cascade deer and elk summer range 15 percent should be optimal cover and 15 percent should be thermal cover. **FW-206**

    Analysis should address non-National Forest System Lands. **FW-207**

11. Within the roaded portions of the Forest, by year 2000, roads open to motorized vehicle **FW-208**
traffic should be reduced to not exceed 2.0 miles per square mile within inventoried deer
and elk winter range (Map Four-4) and 2.5 miles per square mile within inventoried deer
and elk summer range (i.e. outside of inventoried winter range). Open road densities **FW-209**
should be determined in the environmental analysis planning process (including public
involvement). Localized exceptions to these road density Standards and Guidelines may **FW-210**
occur based on the environmental analysis.

    Note: More stringent road density Standards and Guidelines are included in some Management Areas, e.g. B10 Deer and Elk Winter Range prescriptions.

12. Roads may be closed when necessary to limit activities which inhibit deer and elk use of **FW-211**
quality foraging, rearing or wintering areas. Roads should be closed to: **FW-212**

    a. Enhance bull elk and buck deer escapement (i.e. survival through hunting season) and achieve Oregon Department of Fish and Wildlife (ODFW) post hunting season sex ratio objectives:

        1) bull:cow = 7:100

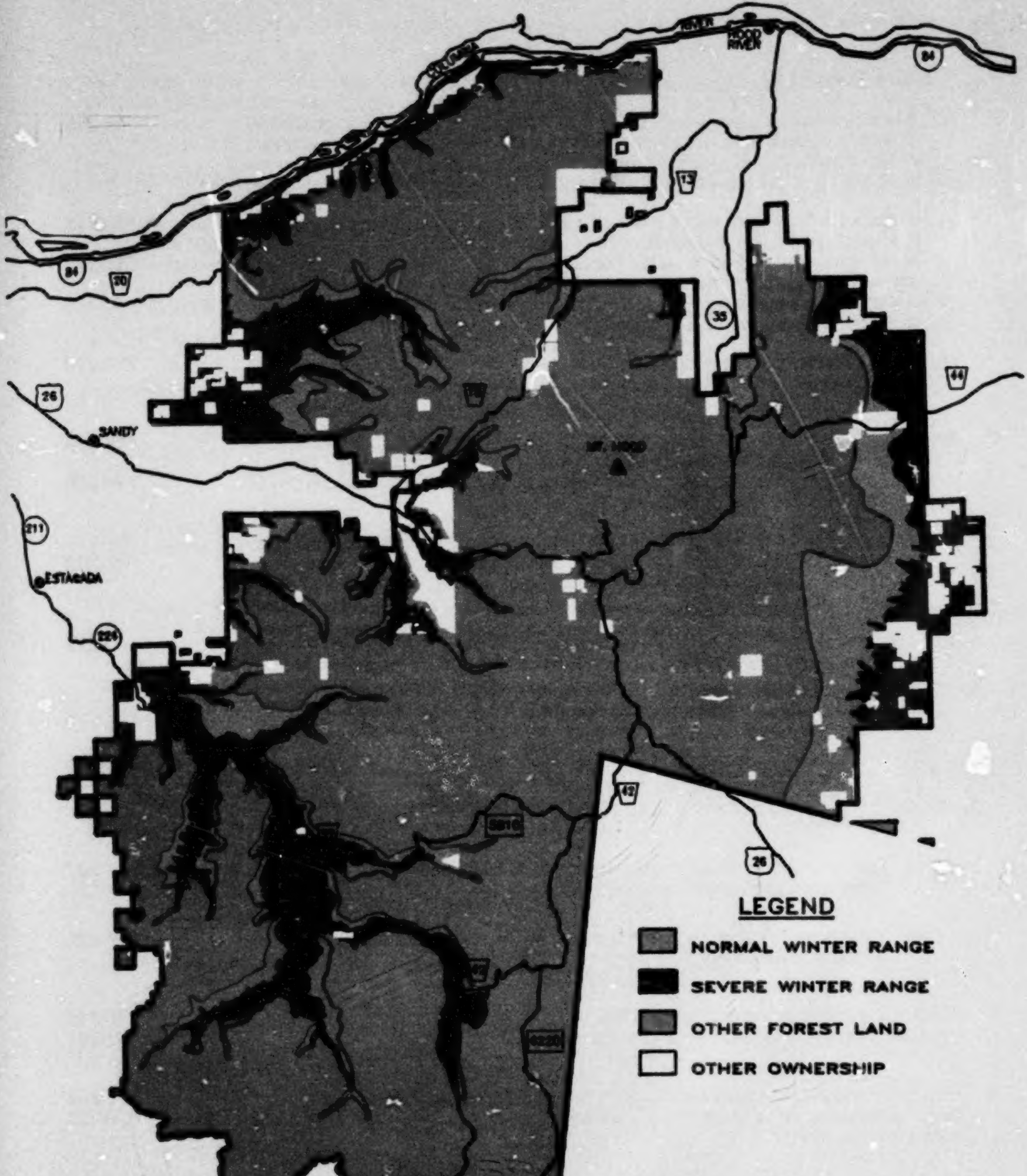
        2) buck:doe = 15:100

    b. Enhance calf and fawn survival and achieve ODFW post hunting season calf:cow and fawn:doe ratios of 40:100 and 70:100, respectively.

    c. Provide limited-road-access recreational hunting opportunities, in coordination with ODFW.

13. Activities within key deer and elk rearing areas may be restricted to minimize interactions between humans and wildlife between May 15 and July 1. **FW-213**

Map Four-4 Inventoried Deer and Elk Winter Range


COLUMBIA
RIVER
HOOD RIVER
84
30
35
35
26
SANDY
211
ESTACADA
224
MT. HOOD
44
42
26
S810
46
S220
DETROIT
LEGEND
NORMAL WINTER RANGE
SEVERE WINTER RANGE
OTHER FOREST LAND
OTHER OWNERSHIP
0 4 8 12 MI

14. Prescribed fire may occur to enhance deer and elk forage. FW-214

B. Snag and Down Log Associated Species

1. Biological Potential

    a. Where new timber harvest units occur (e.g. regeneration harvest and commercial thinning), wildlife trees (i.e. snags and green reserve trees) should be maintained in sufficient quantity and quality to support over time at least 60 percent of the maximum biological potential of primary cavity nesting species, e.g. woodpeckers. FW-215

    b. Measured at the Forest and/or area analysis level (i.e. approximately 5000 acres), at least 40 percent of the maximum biological potential of cavity nesting species shall be maintained through time. If the Forest and/or analysis area is deficient in providing sufficient quantity and/or quality of wildlife trees to support the 40 percent biological potential through time, wildlife tree prescriptions for new timber harvest units and project areas shall compensate for the deficiency. FW-216 FW-217

    c. Wildlife tree prescriptions shall provide for all primary cavity nesting species indigenous to the treated site. FW-218

2. An average total of at least 6 logs per acre in decomposition classes 1, 2 and 3 (USDA Forest Service 1985, Brown editor) should be retained in all project activity areas, e.g. clearcut, commercial thin, salvage, or overwood removal. Additional decomposition class 4 and 5 logs may also be retained. FW-219 FW-220

    a. An average of 2 logs per acre should be maintained in each decomposition class 1, 2 and 3. If logs are not present in a given decomposition class, logs from lesser decomposition classes should be retained to substitute, e.g. classes 1 and 2 can substitute for class 3. FW-221 FW-222

    b. Logs should be at least 20 inches in diameter at the small end and have a volume of at least 40 cubic feet, e.g. a log 20 inches in diameter and 16 feet in length. FW-223

        1) Tree tops should generally not be included. FW-224

        2) Smaller size logs may be retained only if the area is incapable of producing larger trees, or the stand is too young to have 20 inch trees. In these cases, logs representing the largest tree diameter class present in the stand should be retained. FW-225 FW-226

        3) Logs should be relatively solid. Retention of additional hollow and substantially fractured logs should be encouraged. FW-227 FW-228

        4) No area greater than 2 acres in size, and capable of growing sufficient trees, should be without at least 2 logs. FW-229

3. Snags and wildlife trees should be well distributed. No 10-acre area capable of supporting forested conditions should be devoid of wildlife trees. FW-230 FW-231

4. Priority for wildlife tree retention should be Douglas-fir, ponderosa pine and western larch. Emphasis shall be on retaining windfirm wildlife trees, e.g. western red cedar within riparian areas. FW-232 FW-233

5. Wildlife trees retained should be at least 40 feet in height and 22 inches in diameter at breast height. FW-234

   a. Smaller trees may be retained only if the treated area is incapable of producing larger trees or if the stand is too young to have trees of sufficient size. In these cases, wildlife trees retained should be representative of the largest size class present in the stand. FW-235 FW-236

   b. Additional smaller wildlife trees may also be retained. FW-237

6. Green trees (in various size classes) shall be retained to provide replacements as snag quantities decline. Emphasis should be on retaining defective green trees as longterm wildlife trees. FW-238 FW-239

7. Exceptions to the snag and down log Standards and Guidelines may occur within: FW-240

   a. Retention and Partial Retention near-foreground (i.e. 200 feet) areas within B2 Scenic Viewsheds and Designated Viewsheds (see Forestwide Visual Resource Management Standards and Guidelines).

   b. A10 Developed Recreation, e.g. campgrounds and Zig Zag area Summer Homes.

   c. A11 Winter Recreation Areas, i.e. down hill ski slopes.

C. Other Wildlife Species

1. Structural and non-structural habitat improvement projects may occur in all Management Areas except Research Natural Areas (A3). FW-241

2. Introductions of native or non-native wildlife species may occur outside of A2 Wilderness, in cooperation with Oregon Department of Fish and Wildlife. FW-242

3. Plant community integrity of special habitat conditions, e.g. caves, cliffs, talus slopes, meadows, oak patches and dry shrub lands, should be protected. FW-243

4. Hardwood communities should be maintained over time as wildlife habitat and to contribute to habitat diversity. FW-244

5. Raptor nesting areas should be protected by minimizing habitat disturbance adjacent to the nest and by restricting management activities during the nesting season (i.e. March 1 through May 30). Habitat protection zones at least as large as displayed in Table Four-15 should be prescribed. FW-245 FW-246

Table Four-15 Raptor Habitat Protection Zones

Raptor	Habitat Protection Zone
Goshawk	30 Acres
Cooper's Hawk	15 Acres
Sharp-Shinned Hawk	10 Acres
Osprey	10 Acres
Great Gray Owl	30 Acres
Other Owls	5 Acres

6. Road, trail and area closures may be employed to reduce wildlife/human interactions at critical times in key habita areas. FW-247

Forest Protection And Public Safety

A. All fire management activities shall comply with Management Area management direction. FW-248

B. Forest Management Planning and Analysis

1. Fire management planning should minimize "cost plus net value change" , i.e. costs and changes to inherent resource values of the activity area should be minimized. FW-249

   Note: Implementation direction for day to day fire management activities is included in the, annually updated, Mt. Hood Fire Management Action Plan. See Forest Plan Chapter 4 Resource Summary, regarding Fire Management.

2. Fire prevention, detection, suppression and aviation activities shall be performed to support the Fire Management Action Plan. FW-250

3. Equipment and training for USDA-Forest Service employees shall be provided to maintain forces for initial attack and suppression of wildfires. FW-251

4. Environmental analyses shall be completed prior to development of pre-attack facilities (e.g. helispots and shaded fuel breaks). FW-252

C. Fire Prevention, Public Information and Education

1. Emphasis shall be given to the prevention of industrially caused wildfires and logging debris disposal escaped fires. FW-253

2. Fire prevention activities shall be emphasized based on the following fire prevention priority levels: FW-254

   a. Level III (areas of active industrial operations).

   b. Level II (areas of concentrated public use).

   c. Level I (other National Forest System lands).

3. Emphasis should be placed on providing fire prevention information and education within the Mt. Hood fire prevention zone of influence. FW-255

D. Initial Attack of Wildfires (fire suppression and actions and escaped fire situations)

1. All wildfires shall receive an "appropriate suppression response" (Regional Guide for Pacific Northwest Region, 1984). FW-256

2. A Fire Situation Analysis (FSA) (FSM 5130) shall be prepared if a wildfire is uncontrolled following the first burning period.

FW-257

3. Escaped Fire Situation Analyses (EFSA) (FSM 5130) shall be prepared if a wildfire is not suppressed by preplanned initial attack suppression actions, threatens to exceed conditions prescribed in Management Area managment direction or exceeds limits established within the Mt. Hood Fire Management Action Plan (annually updated). FW-258

4. Resource Advisors shall be assigned when necessary to achieve Management Area management direction, e.g. when an EFSA is prepared for a fire threatening an A8 Northern Spotted Owl Habitat Area or an A13 Bald Eagle Habitat Area. FW-259

E. Secondary Attack Forces

The Forest shall maintain cooperative agreements with other state and federal agencies for secondary fire attack forces. FW-260

F. Fire Area Rehabilitation

Rehabilitation of fire areas shall be directed toward reducing further resource damage and mitigating resource impacts associated with fire and fire suppression activities. FW-261

G. Fuels Treatment

The following Standards and Guidelines address management activities pertaining to logging activity fuels and natural forest community fuels (e.g. fallen trees, limbs, shrubs, grasses, sedges and forbes).

1. Prescribed fires to achieve Management Area objectives shall adhere to air quality standards (Regional Guide for Pacific Northwest Region, 1984). See Forestwide Air Quality Standards and Guidelines. FW-262

2. Fuel profiles shall be identified, developed and maintained that contribute to the most cost effective fire protection program consistent with Management Area management direction. FW-263 In areas where repetitive management activities occur, the fuel profile shall be evaluated to determine the most cost effective time(s) of entry and the level of treatment(s). FW-264

3. Dead, down woody material loading levels shall be managed to provide for multiple resource objectives (Regional Guide for Pacific Northwest Region, 1984). FW-265 An economic analysis shall identify resource benefits and costs to determine appropriate funding. See Forestwide Soil Productivity and Wildlife and B7 General Riparian Management Area Standards and Guidelines. FW-266

4. Prescribed fire Burning Plans (FSM 5140) shall: FW-267

- a. Be prepared prior to ignition.
- b. Be approved by an appropriate line officer for each prescribed fire.
- c. Define when a prescribed fire (management ignited or naturally ignited) becomes an escaped fire.

5. A prescribed fire that burns out of prescription and cannot be brought back into prescription with project funds shall be declared a wildfire and an Escaped Fire Situation Analysis (FSM 5130) shall be prepared. **FW-268**

H. Search and Rescue

1. The Forest Service shall be responsive to public needs in emergency situations and shall support and cooperate with local officials (i.e. county sheriff). **FW-269** **FW-270**

2. Cooperative Agreements with county sheriff departments shall be maintained. **FW-271**

3. If appropriate local officials are not readily available, the Forest Service shall take a temporary lead role in any search and rescue emergency in which immediate and quick response will reduce suffering, reduce risk of personal loss, or save lives or property. **FW-272**

I. Law Enforcement

1. All Forest Service officers shall take "appropriate action" on violations of federal laws and regulations that occur on National Forest System lands. **FW-273**

   Note: "Appropriate action" is a reponse determined by the officer based on the activity and the officer's training level. Examples of appropriate actions include: issue a notice of violation, warning notice, verbal warning, arrest, call for assistance, and back off.

2. Coordination with appropriate federal, state, county and local law enforcement agencies shall occur. **FW-274**

J. Pest Management

See Forestwide Timber Management Standards and Guidelines regarding Integrated Pest Management.

K. Public Safety

All Forest Service management activities shall provide for public safety. **FW-275**

L. Hazardous Materials

1. All hazardous material discharges shall receive an appropriate response to identify, confine and remove all contaminants. All discharges shall be managed in accordance with the Forest's Hazardous Material Discharge Implementation Plan; this Plan shall be consistent with Management Area management direction. **FW-276** **FW-277** **FW-278**

2. Project spill contingency plans shall be developed for all project activities where oil or potentially hazardous substances are used by the Forest Service, its permittees, or other users (i.e. contractors) of National Forest lands (40 CFR Part 112). **FW-279**

3. Employee involvement with, and the use of, hazardous materials shall be in accordance with the USDA-Forest Service Health and Safety Code Handbook, FSH 6709.11, Chapter 11. Employees shall comply with all Forest Service policies as identified in the USDA Forest Service Health and Safety Code Handbook, FSH 6709.11, Chapter 9. **FW-280** **FW-281**

Fire lookout station.

Range Management

The following Standards and Guidelines apply to areas identified as available for commercial livestock grazing within Range Allotment Management Plans. Range allotments are identified on Map Four-5.

A. Dispersed Recreation

Commercial livestock may be excluded from localized high use dispersed recreation areas. **FW-282**
Exclusion areas shall be identified in Range Allotment Management Plans. **FW-283**

B. Developed Recreation

Commercial livestock may be excluded from developed recreation sites, e.g. campgrounds. **FW-284**
Commercial livestock shall be excluded from fee campgrounds. **FW-285**

C. Visual Resource Management

1. Range management facilities shall achieve Management Area visual quality objectives. See Forestwide Visual Resource Management Standards and Guidelines and Map Four-4. Designated Viewsheds. **FW-286**

2. Corrals, loading chutes, watering troughs, salt blocks or other livestock attractants shold not be located within areas with prescribed visual quality objectives of foreground retention unless they can be screened from the designated viewer positions. **FW-287**

D. Cultural Resources Management

See Forestwide Cultural Resources Management Standards and Guidelines.

E. Wildlife and Fisheries

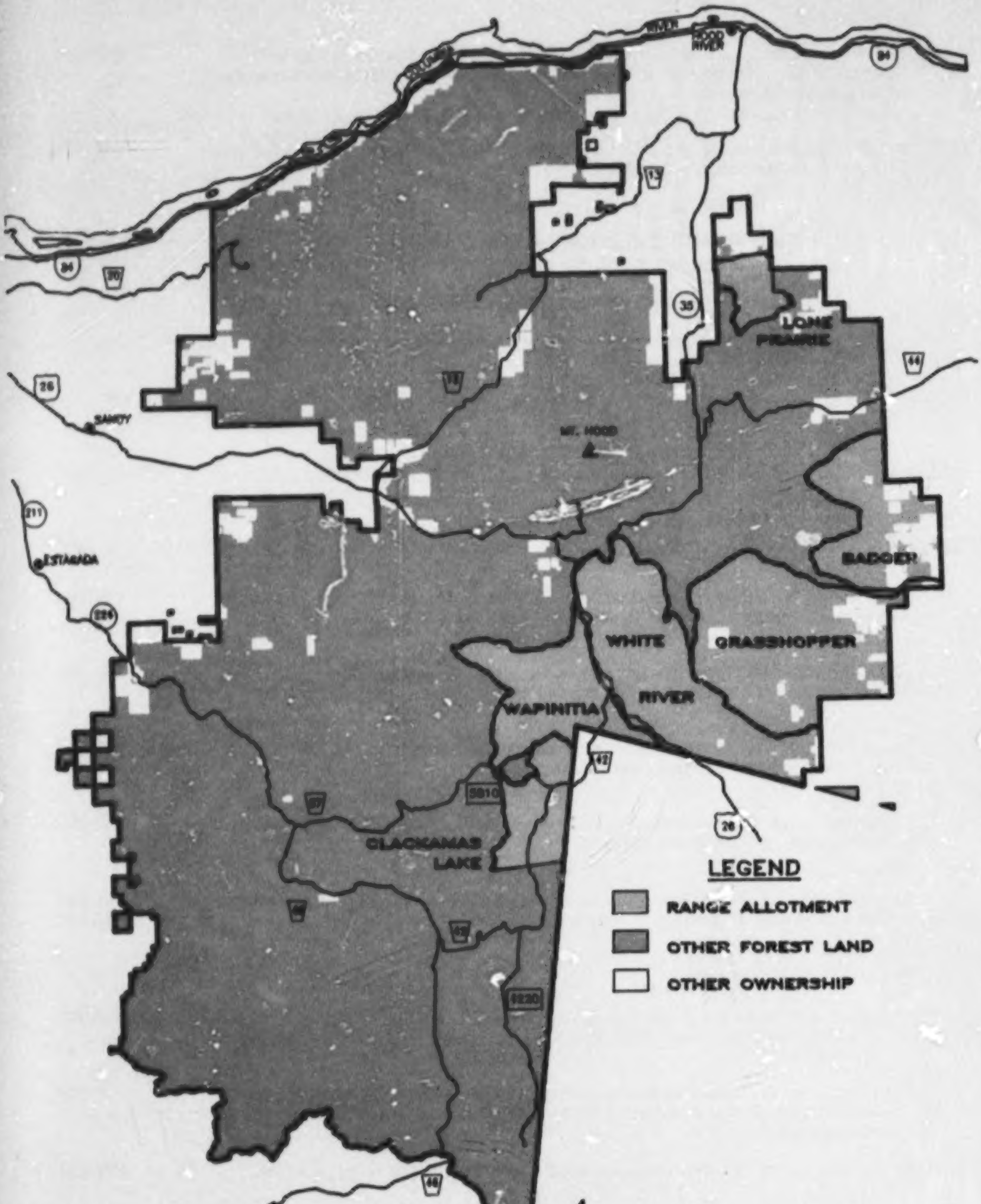
1. See Forestwide Riparian Area Standards and Guidelines and B7 General Riparian and A9 Key Site Riparian Management Area Standards and Guidelines.
2. Range improvements shall be designed to provide wildlife access. **FW-288**

3. Livestock use on inventoried deer and elk winter range (Map Four-4) shall be designed to provide adequate winter forage for deer and elk, e.g. livestock use could be restricted on winter range after early summer to allow fall green up of deer and elk forage species. **FW-289**

F. Range Management

1. Allotments no longer cost effective shall be considered for: **FW-290**

Map Four-5 Range Allotments


HOOD RIVER
84
30
26
SANDY
211
ESTACADA
224
35
MT. HOOD
LONE PRAIRIE
44
BADGER
GRASSHOPPER
WHITE RIVER
WAPINITIA
42
26
5810
57
CLACKAMAS LAKE
46
LEGEND
RANGE ALLOTMENT
OTHER FOREST LAND
OTHER OWNERSHIP
DETROIT
0 4 8 12 MI

   a. Combination with other lands and/or allotments to provide for economical allotments.

   b. Closure.

2. Suitable range lands capable of providing livestock forage, measured as Animal Unit Months (AUMs), may be considered for commercial livestock grazing where consistent with Management Area direction direction. **FW-291**

3. Range allotments shall be operated based on Range Resource Management Levels (FSH 2209.21 R6 Supplement) displayed in Table Four-16. **FW-292**

Table Four-16 Range Allotment Mangement Levels

Allotment	Range Resource Management Level
Grasshopper	C
Badger	C
White River	C
Wapinitia	C
Clackamas Lake	C
Long Prairie	C
Horsetail	A
Roaring River	A
High Rock	A

4. Range forage utilization shall meet the Standards and Guidelines (displayed by Range Resource Management Level) in Tables Four-17 and Four-18. **FW-293**

5. Range facilities (e.g. corrals, loading chutes, water troughs and salt blocks) shall be located so as to not concentrate animals in key wildlife habitat or recreation areas. **FW-294**

6. Range structural improvement construction and maintenance shall be consistent with Management Area management direction. **FW-295**

7. Livestock management facilities affected by other resource management activities shall be rehabilitated, restored and/or relocated. **FW-296**

8. Livestock should be controlled to minimize safety hazards. Forest boundary fences may **FW-297**
be constructed when required for livestock control. **FW-298**

9. Noxious Weed Management

   a. Noxious weed control projects shall comply with Region Six "Managing Competing and Unwanted Vegetation" FEIS, Record of Decision (1988), and Mediated Agreement (1989). **FW-299**

   b. Plants that have been identified as pests by the State Department of Agriculture shall be controlled as described in the Mt. Hood National Forest Noxious Weed Implementation Plan. **FW-300**

   c. Implementation of control measures should adhere to the following priorities: **FW-301**

1) Prevention
2) Early treatment
3) Maintenance
4) Correction
5) No action (per Vegetation Management FEIS, Record of Decision 1988, and Mediated Agreement 1989)

G. Soil, Water and Air Quality

See Forestwide Soil Productivity, Water and Air Quality Standards and Guidelines. See also, Forestwide Riparian Area and B7 General Riparian Management Area Standards and Guidelines.

H. Transportation Systems/Facilities; Travel and Access Management

1. Road Management Objectives shall assure public safety with regard to commercial livestock access to highways. **FW-302**

2. Road design standards shall consider livestock management improvement facilities, e.g. cattle guard construction and maintenance. **FW-303**

3. Roads closed for recreational vehicle use may be used for livestock management purposes, i.e. administrative use. **FW-304**

I. Fire Prevention and Suppression

Escaped Fire Situation Analyses shall consider protection of livestock. **FW-305**

Table Four-17 Range-Forage Utilization

The following table displays levels of allowable use of available forage[1] by commercial livestock in non-riparian areas.

Range Resource Management Level (FSH 2209.21 R-6)	Maximum Annual Utilization (percent)[2]					
	Forest		Grassland		Shrubland	
	Sat. Cond.[3]	Unsat. Cond.[4]	Sat. Cond.[3]	Unsat. Cond.[4]	Sat. Cond.[3]	Unsat. Cond.[4]
A - This level signifies environmental management without livestock.	-	-	-	-	-	-
B - Livestock use managed within current grazing capacity by riding, herding and salting. Cost-effective improvements used only to maintain stewardship of range.	40	0-30	50	0-30	40	0-25
C - Livestock managed to achieve full utilization of allocated forage. Management systems designed to obtain distribution and maintain plant vigor; include fencing and water development.	45	0-35	55	0-35	45	0-30
D - Livestock managed to optimize forage production and utilization. Cost-effective culture practices improving forage supply, forage use and livestock distribution may be combined with fencing and water development to implement complex grazing systems.	50	0-40	60	0-40	50	0-35

[1] *Levels of allowable use of forage will be incorporated in Allotment Management Plans. Allotment Management Plans may include utilization standards which are either lower or rarely higher when associated with intensive grazing systems and specific vegetation management objectives which will meet resource objectives. Figures include cumulative annual use by deer, elk, turkey, and commercial livestock.*

[2] *Utilization is based on percent forage removed by weight for grass, grasslike, and forbs.*

[3] *Satisfactory Condition - See Glossary (satisfactory condition is determined by allotment classification and/or forage condition).*

[4] *Unsatisfactory Condition - See Glossary (anything not "satisfactory").*

Table Four-18 Range-Riparian Forage Utilization

The following table displays levels of allowable use of available forage[1] by commercial livestock within riparian areas.

Range Resource Management Level (FSH 2209.21 R-6)	Maximum Annual Utilization (percent)			
	Grass and Grasslike[2]		Shrubs[3]	
	Sat. Cond.[4]	Unsat. Cond.[5]	Sat. Cond.[4]	Unsat. Cond.[5]
A - This level signifies environmental management without livestock.	-	-	-	-
B - Livestock use managed within current grazing capacity by riding, herding and salting. Cost-effective improvements used only to maintain stewardship of range.	40	0-30	30	0-25
C - Livestock managed to achieve full utilization of allocated forage. Management systems designed to obtain distribution and maintain plant vigor; include fencing and water development.	45	0-35	40	0-30
D - Livestock managed to optimize forage production and utilization. Cost-effective culture practices improving forage supply, forage use and livestock distribution may be combined with fencing and water development to implement complex grazing systems.	50	0-40	50	0-35

[1] *Levels of allowable use of forage will be incorporated in Allotment Management Plans. Allotment Management Plan may include utilization standards which are either lower or rarely higher when associated with intensive grazing systems and specific vegetation management objectives which will meet objectives for the riparian dependent resources. Figures include cumulative annual use by deer, elk, turkey, and commercial livestock.*

[2] *Utilization is based on percent forage removed by weight.*

[3] *Utilization is based on incidence of use, weight, and/or twig length. Example: If 50 leaders out of 100 are browsed, utilization is 50%.*

[4] *Satisfactory Condition - See Glossary (satisfactory condition is determined by allotment classification and/or forage condition).*

[5] *Unsatisfactory Condition - See Glossary (anything not "satisfactory").*

Timber Management

A. Silvicultural Systems

1. Timber stands should not be regeneration harvested until they have reached or surpassed 95 percent of culmination of mean annual increment measured in cubic feet. Exceptions may be made where resource management objectives or special resource considerations require earlier harvest (Regional Guide for Pacific Northwest Region, 1984). FW-306 FW-307

2. Regulated timber harvest activities shall occur only on those lands classified as suitable for timber production. Timber cutting on unsuitable lands may occur, e.g. salvage windthrown timber, protect other multiple use values or activities, or to perform research or administrative studies. FW-308 FW-309

3. The timber volume utilization standards (Table Four-19) to be used in determining timber harvest levels shall be separated into first decade and future decades. Table Four-19 standards shall apply; exceptions may occur where individual market areas and/or specific products present opportunities for standards utilizing a higher proportion of the tree (Regional Guide for Pacific Northwest Region, 1984). FW-310 FW-311 FW-312

Table Four-19 Timber Volume Utilization Standards

Type of Tree	Minimum DBH[1] (Inches)		Minimum Top DIB[2] (Inches)
	First Decade	Thereafter	
Existing mature trees, except lodgepole pine (first and future decades)	9	7	6
Existing commercial thinning size trees and lodgepole pine	7	7	4

[1] *D.B.H. = Diameter At Breast Height;*

[2] *D.I.B. = Diameter Inside Bark*

4. Pruning to improve future lumber quality may be permitted where it increases the present net value of the stand. Pruning to achieve other resource objectives should be coordinated with lumber quality objectives. For example, pruning designed to reduce "ladder fuels" or to promote foreground visual penetration from a travel route could also improve lumber quality if the project prescription required pruning an entire 16 foot base log on each tree. FW-313 FW-314

5. Specific silvicultural systems to be used on individual timber management projects shall be based on site specific analysis and shall be based on the Management Area management direction. FW-315

6. Even-age management may be an alternative considered in the silvicultural prescription **FW-316**
in all forest types, according to Table Four-21. Even-age management principles (see **FW-317**
FEIS Appendix I Silvicultural Methods) shall be applied to all created openings larger
than two acres.

7. Uneven-age management may be considered when appropriate to achieve management **FW-318**
direction. Uneven-age management is the preferred silvicultural system in a portion of **FW-319**
the ponderosa pine forest type (as identified during field investigation) and may be
prescribed in other forest types where needed to meet resource management objectives.

    a. Uneven-aged management may be applied using either individual tree or group **FW-320**
    selection methods, depending on stand and site conditions, and management objectives. Either individual tree or group selection methods may be employed to achieve **FW-321**
    desired stand structure. Table Four-20 displays recognized stand structural types; **FW-322**
    others may be developed if needed for specific purposes.

    b. The maximum size of opening in the group selection method shall be two acres. **FW-323**
    Openings greater than two acres shall be managed by the even-age silvicultural system. **FW-324**

    c. No minimum or maximum stand acreage size limits should be applied where an uneven-age structure can be maintained throughout. **FW-325**

    d. Uneven-age management emphasis should be applied to vigorous stands of **FW-326**
    ponderosa pine which already have an uneven or multi-aged stand structure. Uneven-age management should not be emphasized in mixed conifer stands (eastside **FW-327**
    Cascade) where it could accelerate possible defoliating insect damage within
    younger age classes and other species.

    e. Uneven-age management should not be applied in lodgepole pine types, and should **FW-328**
    only be applied carefully to stands of cedar, western and mountain hemlock, and **FW-329**
    true fir species. Great caution in logging operations should be applied. These **FW-330**
    species have relatively thin bark which is easily damaged during logging and remaining trees are exposed to disease or insect attack.

Table Four-20 Stand Structural Types Recognized For Silvicultural Prescriptions

Type	Description
Even-age	One age class present. The difference in age between trees forming the main canopy usually does not exceed 20 +/- % of the age of the stand at rotation age. Includes stands harvested with seed tree and shelterwood methods, which may have two age classes present for a long period.
Uneven-age	Usually three or more age classes continuously present.
Multi-age	An uneven-age stand with several age classes present, usually not more than four or five. Each age-class may be managed independently of the others for specific management objectives.
Balanced Uneven-age	An uneven-age stand with an approximately equal area allocated to each age class. Ideally, each age class would fully occupy its share of space so younger age classes would have many small trees and older age classes would have fewer large trees.
Unbalanced Uneven-age	An uneven-age stand with one or more age classes occupying a disproportionate share of space.

f. Uneven-age management may be applied when there is reasonable assurance of FW-331
natural regeneration that will contribute to the desired objective stand structure
within 5 years of the harvest entry. Planting or interplanting may be considered to FW-332
maintain genetic quality, desired species composition, or to assure timely regenera-
tion.

g. Uneven-age management should not be applied on slopes where cable logging sys- FW-333
tems would be necessary (i.e. over approximately 30 percent slopes). Exceptions FW-334
may be made if an analysis indicates that available logging methods can provide a
reasonable assurance of continuous access without producing unacceptable damage
to the remaining trees or the site, or if interdisciplinary analysis determines that
resource objectives justify the risk of expected damage.

h. The soil surface area subjected to soil compaction, erosion or displacement shall not FW-335
exceed 15 percent of the project activity area (see Forestwide Soil Productivity
Standards and Guidelines) throughout the foreseeable life of the uneven-age manage-
ment program for the stand. Designated skid trails that provide sufficient access to FW-336
carry out the entire program should be designed at the first entry.

i. Uneven-age management should not be applied where stands are moderately to FW-337
heavily infected with dwarfmistletoe. Stands that have only a light infection may be FW-338
considered for uneven-aged management if the dwarfmistletoe is not transferable to
the species that will be featured in future development of the uneven-aged stand
structure.

j. Uneven-aged management may be most readily applied where stands are free from FW-339
root rots. However, silvicultural prescriptions may specify appropriate mitigation FW-340
measures in Management Areas where uneven-age management is being considered
to fulfill resource objectives other than timber production. Uneven-age management FW-341
should not be considered in stands where root rot losses would be inconsistent with
management objectives.

k. Timber harvest and post sale activities should be planned on approximately a 20 FW-342
year entry cycle; exceptions may be made for other resource considerations. All FW-343
post sale activities, including precommercial thinning, should be completed within 5 FW-344
years of each harvest entry. Salvage logging during interim periods should be FW-345
avoided unless there is an occurrence such as fire, insect attack, or windthrow.

l. Uneven-age management implies that each harvest entry should be followed within FW-346
5 years by establishment of a new age class in the space vacated by the harvested
trees. Natural regeneration, or planting and interplanting may be employed. FW-347

m. Even-age and uneven-age management may be applied to Management Areas across FW-348
the Forest based on Table Four-21.

Table Four-21 Application of Even-age and Uneven-age Management

The following table displays where to apply even-age and uneven-age timber management.

Even-Age Management	Management Area
Permitted	All B, C and D Management Areas (except B1 - Wild segment of WSR River) EB2 - CRGNSA Scenic Viewshed
Preferred	C1 - Timber Emphasis
Shall be Considered	B2 - Scenic Viewshed (Middleground and Background) B3 - Roaded Recreation B5 - Pileated Woodpecker/Pine Marten Habitat B6 - Special Emphasis Watershed B8 - Earthflow

Shall be Considered	B9 - Wildlife/Visual Area B10 - Deer and Elk Winter Range B11 - Deer and Elk Summer Range D Series - Bull Run Watershed Management Areas EB2 - CRGNSA Scenic Viewshed (Middleground)
Should be Considered	B1 - Recreation segment of WSR River B4 - Pine-Oak Habitat B7 - General Riparian Area
May be Considered	B2 - Scenic Viewshed (Foreground) B12 - Backcountry Lakes EB2 - CRGNSA Scenic Viewshed (Foreground)
Usually not Considered	B1 - Scenic segment of WSR River
Not Permitted	B1 - Wild segment of WSR River

Uneven-Age Management	Management Area
Permitted	All B, C and D Management Areas EB2 - CRGNSA Scenic Viewshed
Preferred	B4 - Pine-Oak Habitat (only in Pine/Oak and Seperate Suitability Component - eastside)
Shall be Considered	B2 - Scenic Viewshed (Foreground) B12 - Backcountry Lakes EB2 - CRGNSA Scenic Viewshed (Foreground)
Should be Considered	B1 - Scenic and Recreational segments of WSR Rivers B2 - Scenic Viewsheds (Middleground) B3 - Roaded Recreation B5 - Pileated Woodpecker/Pine Marten Habitat B6 - Special Emphasis Watershed B7 - General Riparian Area B9 - Wildlife/Visual Area EB2 - CRGNSA Scenic Viewshed (Middleground)
May be Considered	C1 - Timber Emphasis (Eastside Cascade) B2 - Scenic Viewshed (Background) B8 - Earthflow B10 - Deer and Elk Winter Range B11 - Deer and Elk Summer Range D Series - Bull Run Watershed Management Areas
Usually not Considered	C1 - Timber Emphasis (Westside Cascade)

8. Forest openings created by the application of even-age harvest methods (e.g. clearcut, shelterwood or seed tree harvest) should not exceed 60 acres in the westside-Cascade Douglas-fir forest type and 40 acres in the other forest types (i.e. non Douglas-fir and eastside-Cascade types). These acreages may be increased by not more than 50 percent, if increases are justified in accordance with Regional Guide direction (Regional Guide for Pacific Northwest Region, 1984). **FW-349** **FW-350**

9. Created openings shall be separated by blocks of land that are not classed as created openings and that contain one or more logical harvest units. Corners of created openings that touch shall be considered a single opening. Blocks of land separating created openings shall be large enough and contain a stand structure appropriate to meet resource requirements (Regional Guide for Pacific Northwest Region, 1984). **FW-351** **FW-352** **FW-353**

10. The total area of created openings contiguous to 30-acre or larger natural openings should not exceed one-third the size of the natural opening and should not occupy more than one-third of the natural opening perimeter. Created openings should be limited to one third the size and one third the perimeter of adjacent natural openings, and should not be created adjacent to any natural openings (regardless of size) unless adequate vegetation along the edge can be developed or retained in sufficient density to protect wildlife and visual management objectives (Regional Guide for the Pacific Northwest Region, 1984). **FW-354 FW-355 FW-356 FW-357**

B. Reforestation

1. Timber harvesting shall be completed in a fashion that reasonably assures each harvest area can be adequately restocked within 5 years after final harvest. **FW-358**

   Note: Five years after final harvest means: 5 years after clearcutting, 5 years after final overstory removal, 5 years after seed tree removal, or 5 years after selection cutting (Regional Guide for Pacific Northwest Region, 1984).

2. A harvested area of commercial forest land shall no longer be considered a created opening for silvicultural purposes when trees are 4.5 feet high, meet the required stocking level, and are free to grow (Regional Guide for Pacific Northwest Region, 1984). **FW-359** Height requirements may be increased to achieve other resource objectives; for example, 20 feet high trees are required in areas managed to achieve Retention and Partial Retention visual quality objectives. See Forestwide Visual Resource Management Standards and Guidelines. **FW-360**

3. Conifer seedling stocking levels shall exceed a minimum of 125 trees per acre at establishment for all species and site groups. The minimum average spacing between crop trees shall be 6 feet at establishment. Higher than minimum stocking levels may be specified and shall be documented in silvicultural prescriptions (Regional Guide for Pacific Northwest Region, 1984). **FW-361 FW-362 FW-363**

C. Timber Stand Improvement (TSI)

1. TSI activities (e.g. precommercial and commercial thinning and fertilization) shall be consistent with Management Area management direction. **FW-364**

2. Crop tree stocking should not exceed 400 trees per acre in the Western Hemlock, lower Pacific Silver Fir, Grand Fir, and Ponderosa Pine zones, or 420 trees per acre in the upper Pacific Silver Fir and the Mountain Hemlock zones. **FW-365**

   Note: These stocking levels reflect consideration for snag/wildlife tree retention levels over the rotation.

3. Hardwood species may be retained for species diversity. **FW-366**

4. Precommercial thinning stocking levels may be adjusted along roads to accomplish wildlife habitat and/or visual resource management objectives. **FW-367**

5. Fertilization may occur in plantations that have been precommercially thinned, and/or ten years prior to the next commercial entry. Douglas-fir stands should be emphasized for fertilization; other species may be fertilized after trial plots have shown a response in growth. **FW-368 FW-369 FW-370**

6. The use of fertilization shall not lower water quality in the fertilized area or downstream. FW-371

7. Commercial thinning should maintain the desired stocking level to achieve a vigorously growing stand throughout the rotation, while considering wildlife cover needs. See Forestwide Wildlife Standards and Guidelines. FW-372

8. Maintenance of Pacific yew as a stand component should be emphasized. FW-373

D. Genetic Tree Improvement

The genetic tree improvement program should be based on the breeding zones identified in the Mt. Hood Tree Improvement Plan (1984). See the Genetic Tree Improvement Resource Summary (Forest Plan, Chapter 4). FW-374

E. Vegetation Management and Herbicide Use

1. As a result of the Northwest Region (R6) "Managing Competing and Unwanted Vegetation" (Vegetation Management) FEIS, Record of Decision(1988), and Mediated Agreement (1989), new provisions for all vegetation management projects shall be followed for all projects planned with NEPA documents after December 8, 1988. FW-375

2. Plans for project implementation shall center around the following specific requirements set forth in the Vegetation Management EIS Record of Decision (1988): FW-376

   a. Consider alternatives of prevention and early treatment of vegetation problems.

   b. Include full and on-going public participation.

   c. Use a site-specific analysis.

   d. Use the herbicide 2,4-D only as a last resort.

   e. Develop human health risk assessments for projects.

   f. Conduct monitoring and evaluation on all projects.

3. The vegetation management parts of the following areas shall be addressed through the Vegetation Management FEIS, Record of Decision (1988), and Mediated Agreement (1989): FW-377

   Site preparation, conifer release, fire management activities, range improvements, noxious weed control, wildlife habitat improvements, recreation and facilities maintenance, roadside and corridor maintenance, tree genetics, and research.

4. All vegetation management tools are available, but emphasis shall be on prevention of vegetation management problems, and herbicides shall be used only when necessary. FW-378 FW-379

5. Competing vegetation should be controlled where there is a possibility that timber harvest areas cannot be reforested within the required 5-year period without vegetation control (Regional Guide for Pacific Northwest Region, 1984). FW-380

6. In timber harvest areas, measures should be taken to: FW-381

a. Prevent damage to plantation crop trees, e.g. animal damage control.

b. Prevent stocking from falling below desired levels.

c. Insure reforestation to desired levels within the prescribed 5 year period.

d. Maintain Pacific yew as a stand component.

F. Integrated Pest Managment

1. Silvicultural methods and cultural treatments should be applied to reduce hazards from insects, diseases, and weed species. If normal insect surveillance indicates the threat of an epidemic, project level detection and control operation (including coordination with other land ownerships) should be accomplished on a Forestwide basis (Regional Guide for Pacific Northwest region, 1984). **FW-382** **FW-383**

2. Integrated Pest Management (IPM) strategies should be used to manage pests within the constraints of laws and regulations, and to meet the objectives of the Management Area. IPM strategies shall be consistent with the Vegetation Management FEIS, Record of Decision (1988) and Mediated Agreement (1989). **FW-384**

3. Prevention aspects of IPM should be emphasized in areas of high visual quality concern. See Forestwide Visual Resource Management Standards and Guidelines. **FW-385**

Minerals Management

A. Impacts of management activities on mineral resources shall be assessed. **FW-386**

B. Administration of Minerals Development Proposals

1. Locatable Minerals

   a. Project Operating Plans for mining activities shall be evaluated and acted upon within 30 days (36 CFR 228). **FW-387**

   b. Minerals claimants shall be allowed to access their mining claims (1872 Mining Law). Access for exploration and development of locatable mineral resources shall be analyzed in response to a proposed Project Operating Plan. A decision on approval of reasonable access shall be made as a result of appropriate environmental analysis. **FW-388** **FW-389** **FW-390**

   c. Project Operating Plans, or Operating Plan modifications, shall include reasonable, operationally feasible, measures and/or requirements to protect other resource values and meet the mineral development objectives. The test for Operating Plan requirements is "taking reasonable measures as would prevent unnecessary or undue degradation" of National Forest System lands (1872 Mining Law). **FW-391**

   d. Mining site reclamation objectives and standards shall be developed (43 CFR 3809), i.e. including consideration of opportunities to enhance other resource values. Concurrent reclamation should be emphasized. **FW-392** **FW-393**

2. Leasable Minerals

   a. Mineral and geothermal lease applications should be reviewed within 90 days. Special lease stipulations when necessary to protect surface resources and/or achieve Management Area direction shall be required. Special lease stipulations for surface resource protection shall be provided to the USDI-Bureau of Land Management. **FW-394** **FW-395** **FW-396**

   b. A "no surface occupancy" stipulation shall be applied to leases only when: **FW-397**

      1) Surface occupancy would cause significant other resource disturbance which could not be mitigated by any other means.

      2) The activity is incompatible with other resource values and management objectives.

3. Saleable (Common Variety) Minerals

   a. Removal of common variety mineral materials (e.g. sand and gravel) shall be administered on a sale or permit basis in areas where development does not conflict with other resource objectives. **FW-398** Mineral material requests shall be processed in accordance with procedures in 36 CFR 228, subpart C. Proposed mineral material sources shall have a Development Plan, before first entry. **FW-399** **FW-400**

   b. Use of currently developed common variety mineral material sources shall be given priority over undeveloped sources. Exceptions shall be made when existing sources are unable to economically supply the quality and quantity of material needed or when conflicts with other resource uses are found to be unacceptable. **FW-401** **FW-402**

   c. The effect of rock crushing activities on air quality shall be considered. See Forestwide Air Quality Standards and Guidelines. **FW-403**

C. Administration of Operations

1. No significant surface disturbing, locatable or saleable minerals-associated activities shall take place until an Operating Plan has been approved. FW-404

2. The Forest shall cooperate with the Bureau of Land Management in analyzing and processing surface use plans of operations for leaseable minerals proposals. FW-405

3. A Forest Rock Resource Plan shall be maintained as guidance for managing common variety minerals. FW-406

D. See Forestwide Land Program Standards and Guidelines regarding mineral withdrawal.

Transportation Systems/Facilities; Travel And Access

A. Forest Recreational Access

1. Opportunities for recreational access may be limited and shall be consistent with management direction. **FW-407** **FW-408**
    a. Areas and trails may be designated as available for motorized and/or non-motorized access. **FW-409**
    b. Areas may be designated as available or unavailable to oversnow vehicle use. **FW-410**
    c. Seasonal closures or travel restrictions may be applied to protect or enhance resource values (i.e. both recreation and non-recreation associated resource values). **FW-411**
2. Provisions of Oregon State Laws relating to the operation of motor vehicles shall be applicable to all open Forest Service roads, i.e. Forest Service road maintenance levels 2 through 5. Applicable Oregon State Laws are enforceable by State and County law officers. **FW-412**
3. Roads, areas and trails closed or restricted to recreational access shall be posted. **FW-413**

B. Transportation Systems and Associated Facilities

1. Planning and Inventory
    a. Road Management Objectives shall be established for all roads during project planning and shall be consistent with management direction. **FW-414** **FW-415**
    b. Design standards for proposed road construction and reconstruction projects shall be determined using specific criteria (Preconstruction Engineering Handbook, FSH 7709.56), including: **FW-416**
        1) Resource management objectives, e.g. visual quality.
        2) Environmental concerns.
        3) Safety.
        4) Physical environmental factors.
        5) Traffic requirements.
        6) Vehicle characteristics.
        7) Road uses.
        8) Economics.
    c. Those road sections passable by standard passenger cars and open to the general public for use without restrictions (i.e. Forest Service road maintenance levels 3 through 5) are subject to Portions of Standards 9, 12, 13, and 14 of the Highway Safety Act (FSM 7701.3, FSM 1535.11). **FW-417**
    d. The potential impact of new road construction (i.e. outside A2 Wilderness and A5 Unroaded Recreation Management Areas) on access and recreational use patterns shall be considered in the development of Road Management Objectives. **FW-418**

2. Construction and Operations

   a. Construction, reconstruction, maintenance and operation of roads shall be based on Road Management Objectives. **FW-419**

   b. Arterial or collector roads should be constructed and maintained for low clearance vehicles. **FW-420**

   c. Local roads designated for long term use should be constructed and maintained to provide for seasonal use, for high clearance vehicles. **FW-421**

   d. All roads shall be maintained to minimize soil erosion and water quality degradation. Rock, soil or organic material should not be sidecast in the construction or maintenance of roads or landings within riparian zones; exceptions may occur for designed stream crossings. **FW-422** **FW-423** **FW-424**

   e. Roads shall be designated as short term when construction is planned for project access and no future project needs for the road are identified. **FW-425**

   f. Roads should be designed and constructed so that they minimize landform disturbance. **FW-426**

   g. Road drainage systems should incorporate practical features to minimize disturbance to natural water drainage. **FW-427**

   h. Vegetation control, as needed, shall be completed along Forest roads to provide for road user safety. Vegetation control shall be in accordance with the Pacific Northwest Region "Managing Competing and Unwanted Vegetation" FEIS Record of Decision (1988), and Mediated Agreement (1989). Vegetation control work shall be consistent with management direction, e.g. visual quality objectives. **FW-428** **FW-429** **FW-430**

   i. Road information, appropriate for Forest roads (e.g. signing and entrance information) should be available to Forest visitors. **FW-431**

   j. Decisions to close or obliterate roads shall be based upon economics, resource objectives, and/or ability to achieve Management Area management direction. **FW-432**

   k. All non-system roads constructed during the Forest Plan planning period shall be revegetated within 10 years of completion of the contract, lease, or permit through which they were constructed (RPA as amended by NFMA, Section 10 (b)). **FW-433**

   l. Potential conflicts between commercial traffic and recreational traffic shall be coordinated to insure public safety. Examples include: (1) designing routes for log haul separate from winter recreation trails, (2) limiting commercial log and rock haul during high recreational use periods, and (3) dust abatement. **FW-434**

   m. Highway structures and related facilities should be designed to blend with natural landscape features. **FW-435**

   n. Roadside landscape treatment activities (e.g. vegetation clearing, rock blasting, grading, and re-vegetation) to stabilize slopes should be designed visually compatabile with the surrounding landscape. **FW-436**

   o. All new road construction shall maintain or enhance fish passage (Oregon Revised Statute 509.605). See Forestwide Fisheries Standards and Guidelines. **FW-437**

3. Aviation Facilities

   a. Designation of aviation facilties shall be consistent with management direction. **FW-438**

   b. Opportunities for aviation facilities, e.g. helispots, should be designated during project planning. **FW-439**

   c. Design and maintenance of aviation facilities shall emphasize safety features at all times. **FW-440**

C. Trails

1. Planning and Inventory

a. Trail Management Objectives shall be established for all trails during project planning. FW-441

b. Design standards for proposed trail construction and reconstruction projects shall be determined using specific criteria (Trails Management Handbook, FSH 2309.18), including: FW-442

   1) Recreation Opportunity Spectrum.

   2) Difficulty Levels.

   3) Trailheads.

c. See Forestwide Visual Resource Management Standards and Guidelines for prescribed visual quality objectives from trails.

d. Segments of older/abandoned/historic trails identified in trail plans may be incorporated into the development of trail systems and/or new trails. FW-443

e. Designated snow-covered roads should be managed as part of the trail system during the winter season for over-snow vehicles and/or skiing. Trail visual quality objectives may not apply to roads used for winter trails. Roads designated as part of the winter trail system should be identified by an interdiciplinary team for snowplowing and coordination. FW-444 FW-445 FW-446

f. Off-road vehicle trails should not incorporate open roads as part of the trail system. FW-447

g. Trail systems shall be designed, located, managed, and maintained to consider user's needs and other resource objectives. FW-448

h. Sno-Park and Trailhead parking shall be provided based on user demand, resource area capacity, site limitations, and Management Area direction. FW-449

i. Considerations should be given to mass transit or public transportation in project planning. FW-450

2. Administration

a. Activities with the potential to adversely impact trails and associated facilities (i.e. identified in trail plans) and/or dispersed recreation sites shall include measures to minimize impacts and provide for protection and/or restoration of the impacted trails, sites, facilities, and structures. FW-451

b. Designated trails, trailheads, associated facilities, and dispersed recreation sites impacted and/or adversely affected by management activities, shall be rehabilitated, restored, and/or relocated. FW-452

3. See Forestwide Dispersed Recreation Standards and Guidelines.

Dispersed Recreation Activities

The following Standards and Guidelines apply to areas outside of A2 Wilderness Management Areas.

A. Planning and Inventory

1. A broad spectrum of year-round dispersed recreation opportunities, experiences, and settings shall be provided where they are not in conflict with Management Area management direction. This includes managing for winter sports opportunities within snow zones. **FW-453**

2. Segments of older/abandoned/historic trails identified in trail plans may be incorporated into the development of trail systems and/or new trails where there is a demonstrated demand. **FW-454**

3. Designated snow-covered roads should be managed as part of the trail system during the **FW-455**
winter season for over-snow vehicles and/or skiing. Trail visual quality objectives (see **FW-456**
Forestwide Visual Resource Management Standards and Guidelines) may not apply to
roads used for winter trails. Roads designated as part of the winter trail system should **FW-457**
be identified by an interdiciplinary team for snow plowing and other resource value
coordination.

4. Forest management activities (e.g. timber harvest and road construction) with the potential to adversely impact trails and associated facilities (identified in trail plans), and dispersed recreation sites shall include measures to minimize impacts and provide for protection and/or restoration of the impacted trails, sites, facilities, and structures. **FW-458**

5. Off-road vehicle (ORV) trails should not incorporate open roads as part of the trail system. **FW-459**

6. Trail systems shall be designed, located, managed, and maintained to consider user's needs and other resource objectives. **FW-460**

7. See Forestwide Visual Resource Management Standards and Guidelines for visual quality objectives from trails.

8. Management prescriptions shall be developed for each identified and designated Special Place site during project analysis. See the Recreation Resource Summary (Forest Plan, Chapter 4) for a Special Place definition and analysis process description. **FW-461**

B. Facility and Site Management, Administration, and Operation

1. Industrial camping shall be by permit only. **FW-462**

2. Designated trails, trailheads, associated facilities, and dispersed recreation sites impacted and/or adversely affected by management activities, shall be rehabilitated, restored, and/or relocated. **FW-463**

3. All sites that cannot be administered to meet designated Recreation Opportunity Spectrum objectives should be rehabilitated or closed during the first decade. **FW-464**

C. Use Administration

1. Opportunities for ORV use should be available except where not allowed by management direction, and where determined to adversely impact land capability and resource values (see Appendix C, Travel and Access Management Guide, and see Forestwide Transportation Systems/Facilities; Travel and Access Standards and Guidelines). **FW-465**

2. Dispersed campsites should be discouraged within 100 feet of lake shores. **FW-466**

D. Recreation Special Uses

See Forestwide Special Uses Standards and Guidelines regarding Recreation Special Uses.

Eligible Wild, Scenic, and Recreational Rivers

The following Standards and Guidelines apply to segments of the following rivers (Map Four-6. Eligible Wild and Scenic Rivers) that are considered "eligible" for wild, scenic, or recreational status as Wild and Scenic Rivers (see FEIS Appendix E - Wild and Scenic River Eligibility):

Zig Zag River

Eagle Creek (Clackamas Co.)

Middle Fk. Hood River

North Fk. Clackamas River

South Fk. Clackamas River

Fish Creek

Collawash River

Oak Grove Fk. Clackamas River

N.Fk. N.Fk. Breitenbush River

South Fk. Roaring River

The purpose of these Standards and Guidelines is to protect the free-flowing nature, outstandingly remarkable values, and identified potential classification of eligible river segments (i.e. wild, scenic or recreational) until the river is designated as a Wild, Scenic or Recreational river or released from consideration (FSM 2354.21 1/86 Amend 96).

Note: Map Four-6 Eligible Wild and Scenic Rivers should not include the East Fork of Hood River.

A. General

1. The eligible river corridor shall cover, as a minimum, an area extending the length of the **FW-467**
eligible river segment, and extending in width one-quarter mile from each bank of the
river. Adjacent river areas beyond one quarter mile from each river bank should be **FW-468**
included if their inclusion could facilitate management of the resources of the river area
(Federal Register Vol. 47, No. 173, 9/7/82).

   Note: The one-quarter mile boundary, each side of eligible rivers, is an interim corridor boundary to protect the river and river related values. If an eligible river is later determined to be suitable and is designated by Congress as a Wild and Scenic River, the corridor boundary will be adjusted to best protect River related values

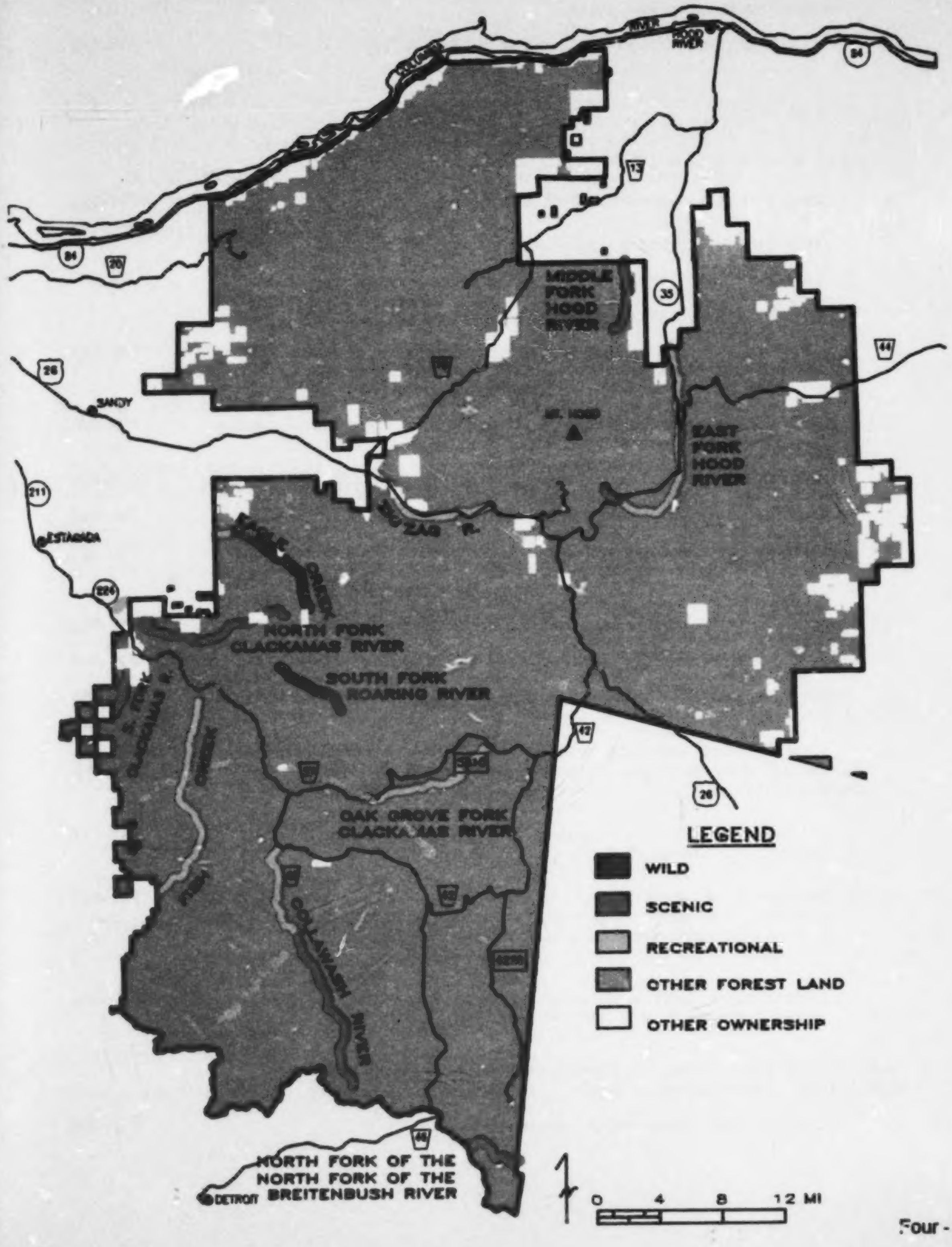
2. To the extent the Forest Service is authorized under law to control stream impoundments and diversions, the free flowing characteristics of identified eligible river segment shall not be modified (FSH 1909.12, Chapter 8, 7/87). **FW-469**

3. Outstandingly remarkable values of the identified eligible river segments (FEIS Appendix E) shall be protected and/or enhanced (FSH 1909.12, Chapter 8, 7/87). **FW-470**

4. Management and development of identified eligible river segments and their corridors shall not modify eligibility or classification of river segments, e.g. classification cannot be changed from wild to scenic or scenic to recreational (FSM 2354.21, FSH 1909.12, Chapter 8, 7/87). **FW-471**

5. Management activities shall be consistent with the following Recreation Opportunity Spectrum (ROS) classes, appropriate (FSM 2311.1) to each river segment classification: **FW-472**

Map Four-6 Eligible Wild and Scenic Rivers


RIVER
HOOD RIVER
84
13
35
84
30
26
SANDY
44
MIDDLE FORK HOOD RIVER
MT. HOOD
EAST FORK HOOD RIVER
ZIG ZAG R.
211
ESTACADA
224
EAGLE CREEK
NORTH FORK CLACKAMAS RIVER
SOUTH FORK ROARING RIVER
S. FORK CLACKAMAS R.
FISH CREEK
42
26
OAK GROVE FORK CLACKAMAS RIVER
COLLAWASH RIVER
46
NORTH FORK OF THE NORTH FORK OF THE BREITENBUSH RIVER
DETROIT
LEGEND
WILD
SCENIC
RECREATIONAL
OTHER FOREST LAND
OTHER OWNERSHIP
0
4
8
12 MI

a. Wild segments shall provide a combination of primitive and semi-primitive nonmotorized ROS settings. **FW-473**

b. Scenic segments shall provide a combination of semi-primitive nonmotorized and semi-primitive motorized ROS settings. **FW-474**

c. Recreational segments shall provide roaded natural ROS settings. **FW-475**

B. Specific Resource Values

1. Dispersed Recreation (within eligible river corridors)

a. Dispersed recreation improvements shall be provided to: **FW-476**

1) Minimize site degradation in wild and scenic segments.

2) Provide for comfort and convenience of users in recreational segments.

3) Provide a minimum of convenience in scenic segments.

b. Dispersed recreation facilities, such as trails and trail structures, shall be consistent with the prescribed visual quality objective (VQO). For example, facilities may be located so they are screened from view from the river and the river bank. **FW-477**

c. River corridor recreational use levels should be managed to protect the outstandingly remarkable values. **FW-478**

d. All river segments shall be managed to remain in a free flowing and unpolluted state. **FW-479**

e. Within wild river corridors, motorized use shall not be allowed. **FW-480**

f. Within scenic and recreational river corridors, motorized use shall be limited to Forest highways, open roads, and designated trails where motorized use is permitted. **FW-481**

g. Within scenic and recreational segments, motorized water craft may be allowed. **FW-482**

h. Areas, roads and segments of rivers closed to vehicle use shall be posted. **FW-483**

i. Administrative use of motorized vehicles shall be allowed within the river corridors of all river segment classifications. **FW-484**

j. Recreational livestock use should be allowed in all eligible river segment corridors. **FW-485** Recreational stock may be tied, grazed, or held for extended periods within the foreground (i.e. 100 feet) of rivers, streams, campsites and trails. **FW-486**

1) Utilization of current year's vegetation growth should not exceed 30 percent (see Forestwide Range Management Standards and Guidelines). **FW-487**

2) No more than 5 percent of an activity area should be in a detrimental soil condition from the combined impact of soil compaction, puddling, displacement, or exposed mineral soil (see Forestwide Soil Productivity Standards and Guidelines). **FW-488**

3) Exposed mineral soil around campsites, trails and key interest areas should not exceed 25 percent of the activity area. **FW-489**

2. Developed Recreation Facility, Site Construction/Administration and Management (within eligible river corridors)

a. Developed recreation improvements shall be provided to: **FW- 490**

1) Minimize site degradation in wild and scenic segments.

2) Provide for comfort and convenience of users in recreational segments.

3) Provide a minimum of convenience in scenic segments.

b. New developed recreational sites shall not be planned within wild segment corridors; existing developed recreation sites may be converted to dispersed sites. New developed sites may occur in both scenic and recreational segment corridors. **FW-491** **FW-492** **FW-493**

c. Developed sites of more than 20 units should be discouraged in scenic river corridors. **FW-494**

d. Developed sites should be screened from view from the river and river bank. **FW-495**

3. Wilderness

Management activities within eligible river segment corridors occurring within A2 Wilderness shall adhere to A2 Wilderness management direction.

4. Visual Resource Management

The following visual quality objectives (VQO) apply to the area within the river corridor (Map Four-6), and the "seen area" from the river (see Designated Viewshed map, supplement to Alternative Q, in the accompanying map packet).

a. Within wild segments, VQOs of Preservation in the foreground and Retention in the middleground shall be prescribed - as seen from the river, river banks and trails within the corridor. **FW-496**

b. Within scenic segments, VQOs of Retention in the foreground and Partial Retention in the middleground shall be prescribed - as seen from the river, river banks, U.S. and State Highways, Forest Highways and roads, trails and recreation facilities within the corridor. **FW-497**

c. Within recreational segments, a VQO of Partial Retention in the foreground and middleground shall be prescribed - as seen from the river, river banks, U.S. and State Highways, Forest Highways and roads, trails and recreation facilities within the corridor. **FW-498**

5. Cultural Resources Management

See Forestwide Cultural Resources Management Standards and Guidelines.

6. Wildlife and Fisheries (within eligible river corridors)

a. Habitat improvement practices, necesary for the protection, conservation, rehabilitation, or enhancement of the river area resources should be permitted. **FW-499**

b. Habitat improvement projects should not significantly modify the river bank, channel direction, or character (i.e. water volume, direction and turbidity) of the mainstem. **FW-500**

c. Non-native species which could significantly change the natural ecosystem should not be introduced. **FW-501**

d. Habitat improvement structures shall mimic naturally occurring events (as opposed to catastrophic); e.g. trees falling in and across the river, boulders falling in or moving down the river course, minor bank sloughing, erosion or undercutting, island building and opening or closing of existing secondary channels. **FW-502**

e. Habitat improvement structures shall not create unusually hazardous conditions or substantially interfere with existing (or reasonably anticipated in the near future) recreational use of the river, e.g. fishing, kayaking, conoeing, rafting, tubing, and swimming. **FW-503**

7. Range Management (within eligible river corridors)

a. Commercial livestock grazing should be allowed within existing approved grazing allotments, provided river banks and riparian vegetation are protected from adverse impacts. See Forestwide Range Management Standards and Guidelines. **FW-504**

b. Permits may be re-issued on vacant allotments if river related resource values are not negatively impacted. **FW-505**

c. Range improvement facilities should be limited to those necessary for proper distribution and control of livestock, e.g. preventing adverse impacts on river resources and river banks. **FW-506**

8. Timber Management

a. Within wild segments, regulated timber harvest shall be prohibited. Timber harvest may take place only for emergency conditions such as insect or disease control, fire, natural catastrophy, disasters, public safety, or under specified conditions on valid mining claims. **FW-507** **FW-508**

b. Within scenic segments and recreational segments, regulated timber harvest may occur. **FW-509**

c. Timber salvage operations to harvest windthrown timber, fire damaged trees, insect attacked trees, or other similar natural tree mortality for protection of the Forest and river-related resource values may occur within all river segment corridors. River banks shall be protected during logging operations. **FW-510** **FW-511**

d. Regulated timber harvest may occur within the seen area from all river segments (i.e. beyond 1/4 mile from the river bank) contingent upon Management Area (MA) management direction. For example, if an eligible river seen area overlaps a C1 Timber Emphasis MA, regulated timber harvest may occur beyond 1/4 mile from the river as long as eligible river VQOs are achieved. **FW-512**

9. Soil, Water and Air Quality (within eligible river corridors)

a. Water quality shall be maintained or enhanced during any management activities. **FW-513**

b. Resource management activities may be allowed provided they do not significantly modify the river bank, channel alignment, or character (i.e. water volume, direction or velocity) of the flow of the main stem. **FW-514**

c. Where eligible river corridors overlap with Management Areas, any conflicts in management direction shall be resolved in favor of protecting the scenic and river resources of the river corridor. **FW-515**

10. Minerals & Energy Management

a. Eligible river corridors for wild segments shall be recommended for withdrawal from mineral entry under the mining and mineral leasing laws. **FW-516**

b. Subject to valid, existing mineral rights, mining activities conducted in eligible scenic and recreational river segment corridors shall be managed in accordance with the provisions of the Wild and Scenic Rivers Act (1989). **FW-517**

c. All new dams, major water diversions, and hydroelectric power facilities not previously authorized by Federal Energy Regulatory Commission (FERC) shall be found inconsistent with the values for which the river was found eligible. The Forest shall recommend FERC denial of the license for construction, or if necessary, shall require conditions to the license that would protect the unique values for which the river was found eligible. **FW-518** **FW-519** **FW-520**

d. Geothermal leases shall include a "No Surface Occupancy" stipulation for that portion of the lease essential to protect resouce values and visual quality within the river corridor. **FW-521**

e. Common variety minerals (e.g. sand and gravel) shall not be developed or removed in any river segment corridors. **FW-522**

f. River values shall be protected in all mineral exploration and development activities. **FW-523**

g. Plans of Operation shall include reasonable, operationally feasible requirements to minimize conflicts with recreational activities and to protect the character of the landscape within the river corriodor. **FW-524**

h. Facilities for operator occupancy, if allowed, shall be designed to minimize site disturbance. During project operation, disturbed soils shall be stabilized prior to autumn high rainfall season. Site disturbance from mineral exploration and development activities shall be rehabilitated within 3 years following project completion. **FW-525** **FW-526** **FW-527**

i. Water quality shall be protected during any mineral exploration and development activities (see Forestwide Water Standards and Guidelines). **FW-528**

11. Geology

See Forestwide Geology Standards and Guidelines.

12. Lands and Special Uses

a. Lands within river corridors recognized as eligible for wild and scenic river designation shall be retained. **FW-529**

b. Existing special uses, including recreation uses, may be allowed to continue where compatible with a river classification. Nonconforming existing special uses shall not be reissued when they expire. **FW-530** **FW-531**

   1) Special use permits for new developments shall not be issued within wild river segment corridors. **FW-532**

   2) New special use permits may be issued within scenic and recreational river segment corridors if the river-related values are protected or enhanced. **FW-533**

c. The construction of new utility and/or transmission lines (e.g. gas lines, geothermal and water pipelines, and electrical transmission lines) should not be permitted in any river segment corridor. **FW-534**

d. Applications for licenses from FERC to construct any impoundment, water conduit, reservoir, powerhouse, transmission line, or other associated hydroelectric work within eligible river segment corridors shall be recommended for denial. **FW-535**

e. All non-hydroelectric dams not presently authorized by the Forest Service shall be prohibited. FW-536

13. Transportation Systems/Facilities; Travel and Access Management

a. Within wild segment corridors, new roads shall not be constructed, and existing roads may be phased out and rehabilitated. FW-537

b. Within scenic segment corridors, new roads and associated facilities and structures may be constructed when no other reasonable alternative for necessary access exists. FW-538

c. Within recreational segment corridors, new roads shall be located and designed to maintain visual quality as seen from the river, river bank, and associated trails. FW-539

d. Within wild river corridors, motorized use shall not be allowed, except for administrative emergency purposes. FW-540

e. Within scenic and recreational river corridors, motorized use shall be limited to Forest highways, open roads, and designated trails where motorized use is permitted. FW-541

f. Within scenic and recreational segments, motorized water craft may be allowed. FW-542

g. Areas, roads and segments of rivers closed to vehicle use shall be posted. FW-543

h. Administrative use of motorized vehicles shall be allowed within the river corridors of all river segment classifications. FW-544

14. Fire Prevention and Suppression (within eligible river corridors)

a. See Forestwide Forest Protection Standards and Guidelines.

b. Off-road vehicle travel off designated Forest roads and trails may occur only for emergency fire suppression or fire management purposes. FW-545

c. Use of tractors to construct firelines shall not be permitted except for emergency fire suppression purposes. FW-546

d. Fire retardant application may occur. Entry of chemicals into water courses shall be minimized (see Forestwide Water Standards and Guidelines). River related resource values shall be protected. FW-547 FW-548 FW-549

15. Wood Residue Management

See Forestwide Wildlife, Soil Productivity and Forest Diversity Standards and Guidelines.

16. Pest Management

Prevention and suppression of pests should be limited to outbreaks which threaten the values of a river corridor or adjacent resources. Biological methods of pest suppression should be encouraged. FW-550 FW-551

Visual Resource Management

A. Visual Resource Planning

1. The visual quality objectives (VQO, USDA-Agricultural Handbook 462, National Forest Landscape Management, Vol. 2, Chap. 1, The Visual Management System) prescribed in management direction represent the minimum level that shall be achieved in long term visual resource management. Management Area VQOs shall be prescribed as summarized in Table Four-22. See Management Area Standards and Guidelines. **FW-552** **FW-553**

2. Visual quality objectives for "designated viewsheds" shall be prescribed as listed in Table Four-23 Designated Viewsheds. Map Four-7 Designated Viewsheds displays the viewsheds listed in Table Four-23, including overlaps (i.e. areas viewed from more than one viewpoint). All areas indicated in blue on Map Four-7 are included within one or more designated viewsheds. Blue areas enclosed within black lines represent areas with overlapping viewer positions and VQOs. See 3/8" per mile map of Designated Viewsheds (Supplement to Alternative Q), included with the FEIS Alternative maps, for designated viewpoints for each black line enclosed area. **FW-554**

   Note: "Designated viewsheds" (Table Four-23), including all or portions of selected inventoried viewsheds (FEIS Map III-12, Inventoried Scenic Viewsheds), represent areas of the Forest where selected sets of VQOs are prescribed. Designated viewsheds are, in large part, recognized in Alternative Q (preferred alternative) as B2 Scenic Viewshed Management Areas. However, portions of many designated viewsheds have other Management Area designations; in these cases the management direction includes the VQOs displayed in Table Four-23.

Table Four-22 Visual Quality Objectives by Management Area

The following table summarizes visual quality objectives (VQOs) by Management Area (MA) and by "distance zone" from selected viewer positions. See MA Standards and Guidelines for descriptions of viewer positions. These VQOs apply only to lands within the indicated MAs. Designated Viewsheds (Table Four-23) apply VQOs to selected acreages (Map Four-7) which overlap MAs; if designated viewshed VQOs are not consistent with the following VQOs, the VQOs which provide the highest level of visual quality protection predominate.

Management Areas	Distance Zone from Viewer Position		
	Foreground	Middle-ground	Back-ground
A2 Wilderness	P	P	P
A3 Research Natural Area	P	P	P*
A4 Special Interest Area	R	PR	PR
A5 Unroaded Recreation	R	R	R
A6 Semi-Primitive Roaded Recreation	R	R	R*
A7 Special Old Growth	R	R	R*
A8 Northern Spotted Owl Habitat Area	PR	PR	PR
A9 Key Site Riparian	PR	PR	PR*
A10 Developed Recreation	PR	PR	PR*
A11 Winter Recreation Area	PR	PR	PR
A12 Outdoor Education Area	R	R*	R*
A13 Bald Eagle Habitat Area	PR	PR*	PR*
B1 W&S River - Wild Segment	P	R	PR
B1 W&S River - Scenic Segment	R	PR	PR
B1 W&S River - Recreational Segment	PR	PR	PR
B2 Scenic Viewshed	See Management Area Standards and Guidelines		
B3 Roaded Recreation	PR	PR	PR*
B4 Pine-Oak Habitat Area	M	M	M
B5 Woodpecker/Pine Marten Habitat	M	M	M*
B6 Special Emphasis Watershed	M	M	M
B7 General Riparian Area	PR	M	M*
B8 Earthflow	M	M	M
B9 Wildlife/Visual Area	R	PR	PR*
B10 Deer and Elk Winter Range	M	M	M*
B11 Deer and Elk Summer Range	M	M	M*
B12 Backcountry Lakes	R	PR	PR*
C1 Timber Emphasis	M	M	M
D Bull Run Watershed Management Area			
DA1 Bull Run Physical Drainage	PR	PR	PR
DA2 North Buffer-No Regulated Harvest	R	R	R
DA3 Research Natural Area	P	P	P
DA8 Northern Spotted Owl Habitat Area	PR	PR	PR
DA9 Key Site Riparian	PR	PR	PR
DA13 Bald Eagle Habitat Area	PR	PR	PR
DB2 Scenic Viewshed	PR	PR	PR
DB5 Woodpecker/Pine Marten Habitat	M	M	M

DB7 General Riparian Area	PR	M	M
DB8 Earthflow	M	M	M
DC1 Timber Emphasis	M	M	M
E Columbia River Gorge National Scenic Area			
EA1 Scenic Area	R	R	R
EA4 Special Interest Area	R	R	R
EA8 Northern Spotted Owl Habitat Area	R	R	R
EA9 Key Site Riparian	R	R	R
EA10 Developed Recreation	PR	PR	PR
EA12 Outdoor Education Area	R	R	R
EA13 Bald Eagle Habitat Area	R	R	R
EB2 Scenic Viewshed	R	PR	PR
EB5 Woodpecker/Pine Marten Habitat	R	R	R
EB7 General Riparian Area	R	R	R

LEGEND

Visual Quality Objectives
P = Preservation
R = Retention
PR = Partial Retention
M = Modification

Distance Zones
Foreground = Zero to 1/2 mile from viewpoint
Middleground = 1/2 mile to 5 miles from viewpoint
Background = Beyond 5 miles from viewpoint

*This distance zone does not exist within this Management Area in Alternative Q (preferred).

Table Four-23 Designated Viewsheds

Designated viewsheds are listed, along with their related viewer positions, and Visual Quality Objectives for three distance zones from the viewer positions.

Designated Viewsheds	Viewer Position	Visual Quality Objective		
		FG	MG	BG
Larch Mountain	Road 15, Rec Site	R	PR	PR
Lost Lake	Road 13, Lake, Campground	R	PR	PR
Hood River Valley	OR Hwy 35	R	PR	PR
Highway 35, N. Bennett Pass	OR Hwy 35, Rec. Sites	R	PR	PR
Highway 35, S. Bennett Pass	OR Hwy 35, Rec. Sites	R	R	PR
Highway 26, West of Jct/ Hwy 35	US Hwy 26, Rec. Sites	R	R	PR
Highway 26, East of Jct/Hwy 35	US Hwy 26, Rec. Sites	R	PR	PR
Timberline Road	OR Hwy 173	R	PR	PR
Timberline Lodge	Lodge	R	PR	PR*
Dufur Mill Road	Road 44	R	PR	PR
Trillium Lake	Road 2656, Lake, Dam, CG	R	PR	PR
Skyline Road	Road 42 (Jct. Hwy 26-Rd 57)	R	PR	PR
Highway 216	OR Hwy 216	R	PR	PR
Timothy Lake	Road 57, Lake, PCNST	R	PR	PR
Rock Creek Reservoir	Lake, Campgrounds	R	PR	PR
Lower Clackamas	OR Hwy 224, Campgrounds	R	PR	PR
Upper Clackamas, N. of Rd 4690	Road 46, Campgrounds	R	PR	PR
Upper Clackamas, S. of Rd 4690	Road 46, Campgrounds	PR	M	M
Hot Springs Fork	Rd 63 & Rd 70, Rec. Sites	PR	PR	M
Oak Grove Fork	Road 57	R	PR	PR
White River road	Road 48	PR	M	M
Clear Lake	Lake, Shoreline, Campground	PR	M	M

Designated Wild, Scenic, and Recreational River Viewsheds

River	Segment	Viewer Position	Visual Quality Objective		
			FG	MG	BG
Clackamas		River Trails			
	Recreation		PR	PR	PR
	Scenic		R	PR	PR
Roaring		River, Trails			
	Recreation		PR	PR	PR
	Wild		P	R	PR
Sandy		Roads 18, 1825, 1825100, Trail 797, Campgrounds			
	Recreation		PR	PR	PR
	Wild		P	R	PR
Salmon		River			
	Recreation		PR	PR	PR
	Wild		P	R	PR
White		River			
	Recreation		PR	PR	PR
	Scenic		R	PR	PR

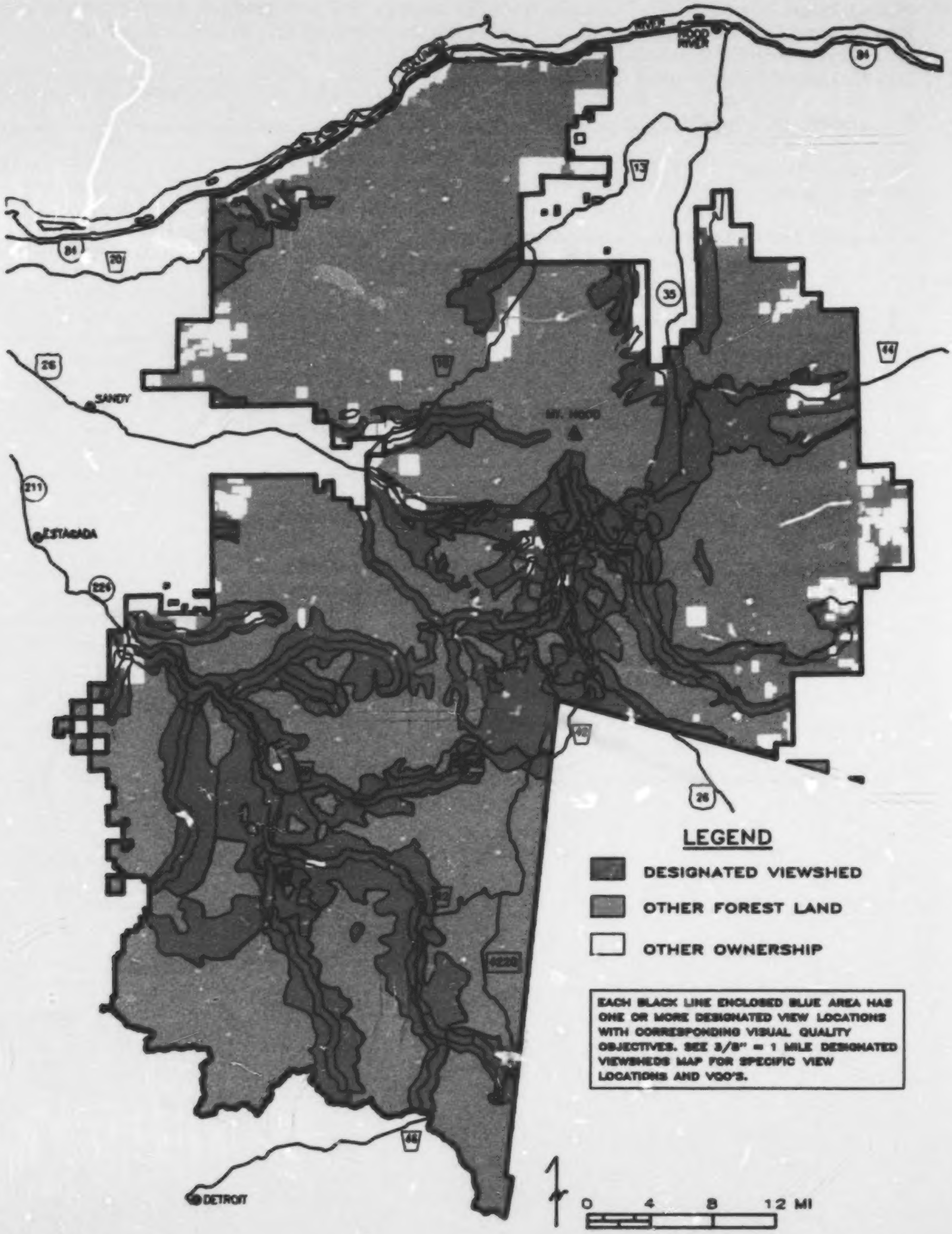
LEGEND (Table Four-23)

Distance Zones
FG = Foreground (up to 0.5 mile)
MG = Middleground (0.5 to 5 miles)
BG = Background (beyond 5 miles)

Visual Quality Objectives
R = Retention
PR = Partial Retention
M = Modification

*Background distance from 5 miles to approximately 12 miles = PR

Map Four-7 Designated Viewsheds


COLUMBIA
RIVER
HOOD RIVER
84
84
20
13
35
44
26
SANDY
MT. HOOD
211
ESTACADA
224
42
26
4220
46
DETROIT
LEGEND
▨ DESIGNATED VIEWSHED
▨ OTHER FOREST LAND
☐ OTHER OWNERSHIP
0
4
8
12 MI

EACH BLACK LINE ENCLOSED BLUE AREA HAS ONE OR MORE DESIGNATED VIEW LOCATIONS WITH CORRESPONDING VISUAL QUALITY OBJECTIVES. SEE 3/8" = 1 MILE DESIGNATED VIEWSHEDS MAP FOR SPECIFIC VIEW LOCATIONS AND VQO'S.

3. A higher VQO than the minimum prescribed may be achieved where consistent with Management Area management direction. FW-555

4. The prescribed VQO should be achieved within one year after completion of any project activities. Short term deviations from prescribed visual quality objectives may occur due to catastrophic events, e.g. fire, windstorm, earthquake, and insect damage. FW-556 FW-557

5. See Forestwide Eligible Wild and Scenic River Standards and Guidelines for VQOs within "seen areas" from Eligible Wild and Scenic Rivers.

6. See Item I for VQOs along trails.

7. Rehabilitation actions shall be planned and scheduled in areas where existing landscapes do not presently meet the prescribed VQOs, i.e. provided vegetation manipulation is allowed in the area. FW-558

B. Recreation and Administrative Site Construction

Buildings and other structures should be located and designed to blend with the natural landscape character in both foreground and middleground distance zones within areas with prescribed VQOs of Retention and Partial Retention. FW-559

C. Timber Management

1. Timber harvest units (within all distance zones) should not dominate over natural landscape character (i.e. form, line, color and texture) in areas where VQOs of Retention and Partial Retention are prescribed. FW-560

2. Harvest units should blend with the natural landscape character where VQOs of Modification are prescribed. FW-561

3. As a measure to achieve prescribed VQOs, only a limited portion of the "seen area" within viewsheds should be in a visually disturbed condition at any given time. Seen areas should be identified from selected viewer positions during project implementation planning. FW-562 FW-563

   Note: The "seen area" is the portion of the landscape visible from a viewer position on a travel route, water body or recreation use area.

   Note: A created opening is generally no longer considered visually disturbed when the vegetation within it reaches an average of 20 feet in height.

   a. Within landscapes where Retention VQOs are prescribed, the maximum percent of the seen area visually disturbed should not exceed 8 percent at any one time or 4 percent per decade. FW-564

   b. Within landscapes where Partial Retention VQOs are prescribed, the maximum percent of the seen area visually disturbed should not exceed 16 percent at any one time or 8 percent per decade. FW-565

   c. Within landscapes where Modification VQOs are prescribed, the maximum percent of the seen area visually disturbed should not exceed 25 percent at any one time. FW-566

4. Natural diversity of plant species (and/or age classes) should be maintained or increased in landscapes where Retention (foreground and middleground) and Partial Retention (foreground) VQOs are prescribed. **FW-567**

5. Landings shall be hidden from viewer positions in landscapes where Retention VQOs are prescribed. Landings should not dominate over natural landscape character where Partial Retention VQOs are prescribed. Mitigation measures may be necessary within the first year following an activity to achieve these Standards and Guidelines (see item A.4, above). **FW-568** **FW-569** **FW-570**

6. Tree stumps shall be cut so as to not dominate over natural form, line, color, and texture in foreground zones of landscapes where Retention and Partial Retention VQOs are prescribed. **FW-571**

D. Soil, Water and Air Quality

Ground disturbance created during construction of permanent and/or nonpermanent structures or facilities shall not: **FW-572**

1. Remain visually evident in landscapes where Retention VQOs are prescribed.
2. Dominate over natural form, line, color, and texture in foreground of landscapes where Partial Retention VQOs are prescribed.

E. Minerals

1. If surface mines are located in the foreground of designated viewsheds (Table Four-23), they shall be screened from the viewpoint and should not dominate the natural form, line, color and texture of the landscape. **FW-573**

2. Rock quarries, stockpiles and geothermal development activities should not be located in the foreground of designated viewsheds (Table Four-23) with a VQO of Retention, unless they are screened from view. Rock quarries, stockpiles and geothermal development activities should not dominate the natural form, line, color and texture of the landscape. **FW-574** **FW-575**

F. Transportation Systems/Facilities

1. New roads should not dominate natural landscape character (i.e. form, line, color, and texture) where Retention and Partial Retention VQOs are prescribed. **FW-576**

2. New utility rights-of-way should be located and designed to blend with the natural landscape character where Retention and Partial Retention VQOs are prescribed. **FW-577**

3. New transmission lines and communication towers should be screened, designed, and/or colored to blend with the surrounding landscape where Retention and Partial Retention VQOs are prescribed. **FW-578**

G. Fire Prevention and Suppression

1. Fire suppression actions should be planned to achieve the prescribed VQOs. **FW-579**

2. Rehabilitation of fire suppression activities should be implemented in landscapes where Retention and Partial Retention VQOs are prescribed if visual quality has been impaired. **FW-580**

H. Wood Residue Management

1. Wood residue treatment, and other fire and fuel management activities shall be designed to achieve prescribed VQOs. **FW-581**

2. Exceptions to organic matter (e.g. down woody debris) management direction (see Forestwide Wildlife, Forest Diversity and Soil Productivity Standards and Guidelines) may occur within Retention and Partial Retention near-foreground areas (i.e. 200 feet) of designated viewsheds (Map Four-7) as necessary to achieve visual quality objectives. **FW-582**

3. Maintenance of natural-appearing quantities and character of down woody debris shall be emphasized. **FW-583**

I. Trails

1. Trail visual quality objectives (i.e. outside of A2 Wilderness) shall be prescribed for near foreground (i.e. the first 660 feet each side of the trail, unless screened by topography), far foreground (i.e. the second 660 feet) and middleground based on trail sensitivity level as displayed in Table Four-24. Prescribed trail VQOs apply to both existing trails and planned trials, as displayed in Map Four-8, Trail Sensitivity Levels. **FW-584**

   a. Sensitivity Level I trails shall have prescribed VQOs of Retention, Partial Retention and Modification in near foreground, far foreground and middleground distance zones, respectively. Ski lift facilities within A11 Winter Recreation Management Area facilities are an exception; a VQO of Partial Retention in near and far foreground should be achieved. **FW-585**

   b. Sensitivity Level II trails shall have prescribed VQOs of Partial Retention, Modification and Modification in near foreground, far foreground and middleground distance zones, respectively. **FW-586**

   c. Sensitivity level III trails shall have a prescribed VQO of Modification for all distance zones. **FW-587**

   Note: Trail sensitivity levels are as follows:

   1) Level I includes Pacific Crest National Scenic Trail and National Recreation Trails, as well as trails within and going to and from National Scenic Areas, A2 Wilderness, and A4 Special Interest Areas.

   2) Level II includes all trails not classified as Level I or Level III.

   3) Level III includes trails used primarily for fire protection and administrative uses, as well as low recreational use trails and trails used primarily for "putting on miles". Examples include powerline corridor trails, old roads used as trails, and trails associated with equestrian, mountain bicycles, or motorcycles.

2. Temporary trail VQO deviations (e.g. allow Partial Retention VQO when Retention VQO is prescribed) may occur within near-foreground areas, within C1 Timber Emphasis Management Areas. VQO deviations (Table Four-24) shall not exceed 20 percent of the trail length within a C1 Management Area. **FW-588** **FW-589**

Table Four-24 Trail Visual Quality Objectives

Visual quality objectives (VQOs) along Sensitivity Level I, II and III trails are displayed by near-foreground (first 660 feet each side of the trail), far-foreground (second 660 feet) and middleground (from 1320 feet to 5 miles) distance zones.

Trail Sensitivity Level	Visual Quality Objective per Distance Zone			VQO Allowed Within C1 MA for 20% of Trail Length
	Near-Foreground	Far-Foreground	Middleground	
I	Retention	Partial Retention	Modification	Partial Retention
II	Partial Retention	Modification	Modification	Modification
III	Modification	Modification	Modification	Not Applicable

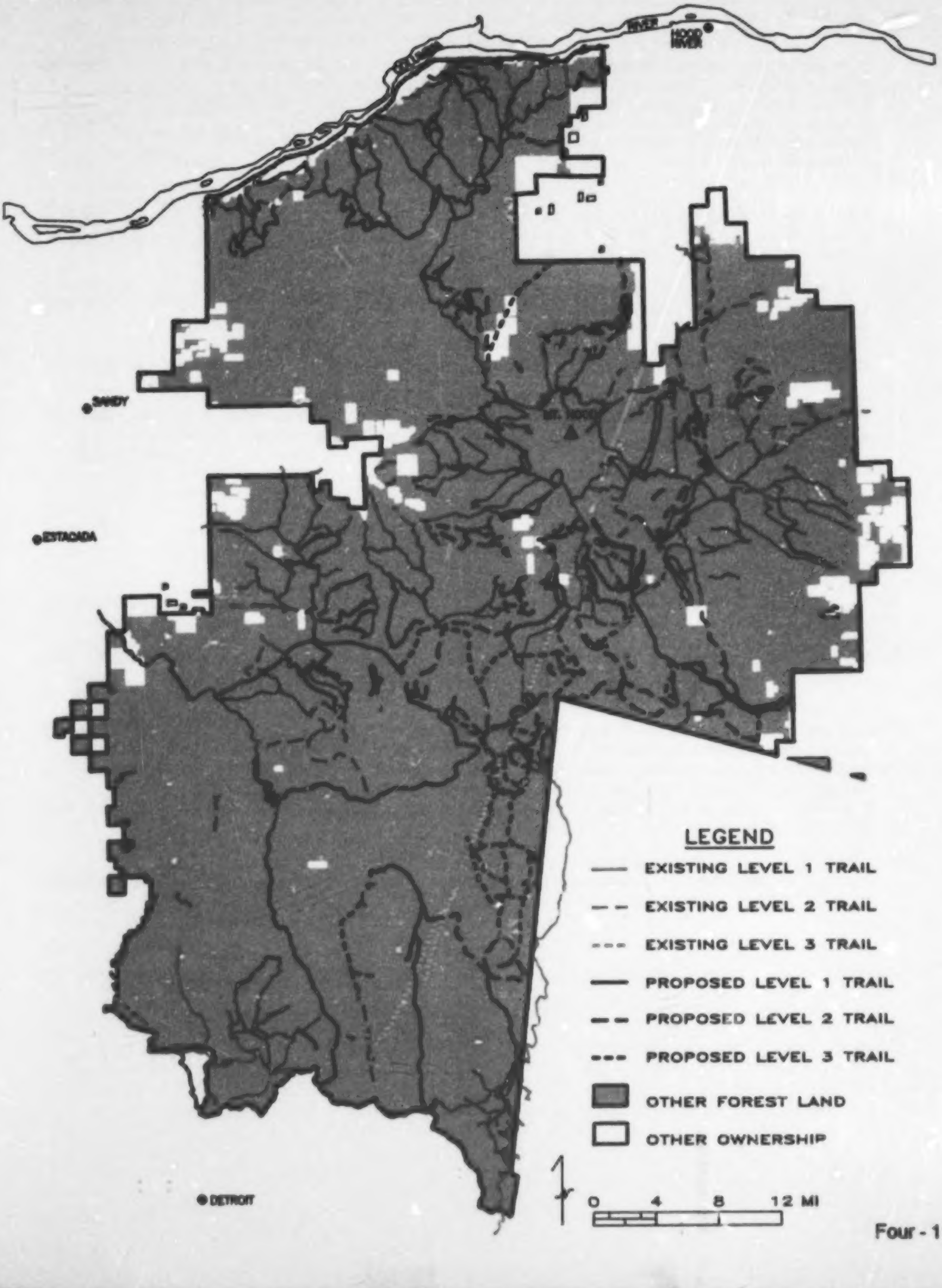
3. Road crossings of trails may occur, but should be limited in quantity. **FW-590** **FW-591**

   a. Road crossings exceeding 1 between the trailhead and the Wilderness or Special Area boundary should not occur. Roads intersecting Level I trails should be open only to administrative traffic. **FW-592** **FW-593**

   b. Permanent road crossings exceeding 1 per mile should not occur. One additional temporary road crossing per mile may occur if obliterated after project implementation. **FW-594** **FW-595**

   c. Road crossings exceeding 2 per mile should not occur. Temporary roads may also occur if obliterated after project implementation. **FW-596** **FW-597**

Map Four-8 Trail Sensitivity Levels


COLUMBIA RIVER
HOOD RIVER
SANDY
ESTACADA
MT. HOOD
DETROIT
LEGEND
EXISTING LEVEL 1 TRAIL
EXISTING LEVEL 2 TRAIL
EXISTING LEVEL 3 TRAIL
PROPOSED LEVEL 1 TRAIL
PROPOSED LEVEL 2 TRAIL
PROPOSED LEVEL 3 TRAIL
▨ OTHER FOREST LAND
☐ OTHER OWNERSHIP
0 4 8 12 MI

Cultural Resources Management

A. Planning and Inventory

1. A professionally supervised cultural resource inventory program shall be conducted, on a project specific level, for all activities which might effect resources eligible for the National Register of Historic Places, including land exchanges and facility maintenance. **FW-598** A systematic program and inventory of areas not affected by projects shall be implemented, in order to assemble a complete inventory of Forest cultural resources (Executive Order 11593). **FW-599**

2. All cultural resources shall be managed as though eligible for the National Register of Historic Places pending the results of a full evaluation and a management decision is reached on the resources' disposition (Executive Order 11593 and 36 CFR 800.11d). **FW-600**

3. Consultation with other agencies (e.g. The State Historic Preservation Office, The Advisory Council on Historic Preservation, appropriate Government bodies, and Indian Tribes) shall occur when required by law or when it is in the public interest (36 CFR 800.1c). **FW-601**

4. Field survey strategies shall be completed in compliance with a Memorandum of Understanding with Oregon State Historic Preservation Office (1979, amended 1982 and 1989). **FW-602**

5. The cultural resource overview of the Forest shall be maintained and periodically updated. **FW-603** The overview shall contain a summary of all previously recorded cultural resource information for the Forest, provide a framework for evaluating cultural resources identified through the inventory process, develop a research design to guide future surveys, inventories, and scientific investigations, and identify opportunities for interpretation of a range of cultural resources (36 CFR 219.4 (a)(1)). **FW-604**

6. Management plans shall be prepared for each National Register property, or historic property of substantial value, or property under Granger-Thye Permit (FSM 2360.3(3)). **FW-605**

7. Cultural resource inventories shall be completed during the project planning stage (i.e. before a Decision Notice or Record of Decision is signed) for all proposed projects which may potentially affect a cultural resource (36 CFR 800.3c). **FW-606** Projects requiring a cultural resource inventory include all Federally funded undertakings, and undertakings requiring a Federal permit. Inventories of other (non-project) areas on Forest lands shall be completed as opportunities occur (36 CFR 800.3c). **FW-607**

8. Field survey results shall be documented to allow review of their technical adequacy (48 CFR 44716). **FW-608**

B. Evaluation and Assessments

1. All proposed projects which could affect a cultural resource shall be assessed for their FW-609
   effect on National Register, eligible, or unevaluated properties. Assessments shall use FW-610
   the criteria of "effect and adverse effect" (36 CFR 800.9). Projects include all Federally
   funded untertakings, and undertakings requiring Federal permit (36 CFR 800.9 (a)(b)).

2. The Forestwide cultural resource evaluations shall be evaluated by theme groups, FW-611
   agreements, or other cost-effective means. Theme group examples include: homesteads,
   fire lookouts, and Civilian Conservation Corps camps.

3. Cultural resources that may be affected by project activities shall be evaluated using the FW-612
   criteria of "significance" to determine their eligibility to the National Register (36 CFR
   800.9a). Evaluations of other cultural resources shall be completed as opportunities FW-613
   occur (36 CFR 800.1(a) and 800.2(a)).

4. Eligible cultural resources shall be nominated to the National Register (36 CFR 60.9a). FW-614

C. Protection and Enhancement

1. Cultural resources considered eligible for the National Register of Historic Places shall FW-615
   be protected by avoiding adverse impacts to the resource site or by conserving the
   values through proper scientific study and/or data recovery. Eligible cultural resources FW-616
   shall be protected from human depredation and natural destruction. Protection FW-617
   prescriptions may include physical protection such as fences and barriers, scientific
   study and collection, patrolling and site monitoring, proper use or removal of signs,
   maintaining site anonymity, and public education (Executive Order 11593 and Historic
   Sites Act, 1935).

2. When impacts to a cultural resource can not be avoided during project implementation, FW-618
   mitigation shall occur. Mitigation actions shall be completed and documented before FW-619
   project activities begin. Mitigation measures may include data recovery, excavation, or FW-620
   recordation to Historic American Engineering Record (HAER) standards. Actual FW-621
   mitigation measures shall be determined through consultation with SHPO and Advisory
   Council on Historic Preservation and development of Memoranda of Agreement with
   SHPO for specific cases (36 CFR 800.5(e)(2)(4)).

3. Project activities occurring within the vicinity of a National Register eligible or FW-622
   unevaluated cultural resource should be monitored during project operation to assure
   unprojected impacts to the cultural resource do not occur.

4. Land use permits, contracts, and other types of land use/occupancy authorities issued or FW-623
   agreed to by the Forest Service, shall contain stipulations or clauses for the protection or
   mitigation of cultural resources when cultural resources are present within the affected
   area (36 CFR 800.9b).

5. National Register or eligible historic buildings shall be maintained (Executive Order FW-624
   11595 and 36 CFR 68.4).

6. Cultural resources should be developed and interpreted for educational and recreational FW-625
   purposes when adequate provisions are available to protect the cultural resource
   (Executive Order 11593, 7 CFR 3100.4).

7. **Cultural materials, artifacts, specimens, and associated records collected on the Forest or as a result of its undertakings shall be protected, cared for and maintained, i.e. curated (36 CFR 261.9, 36 CFR 296.1, and Public Law 960515 The Natural Historic Preservation Act, as amended).** **FW- 628**

Human Rights

A. Administration

1. The Forest shall be managed and administered in such a manner as to provide all persons equal opportunity, regardless of race, color, creed, sex, marital status, age, handicap, religion, or national origin. **FW-627**

2. The Forest shall be managed to break down social and institutional barriers to legitimate uses of the Forest by nontraditional groups. **FW-628**

3. Consultation with diverse cultural groups shall occur on a regular basis. **FW-629**

4. The treaty rights and privileges of Native Americans shall be honored. Treaty rights and privileges should supercede other management direction. **FW-630** **FW-631**

5. The American Indian Religious Freedom Act (1978) shall be considered in administration of the Forest. **FW-632**

    a. Appropriate Native American groups shall be notified prior to implementation of any proposed administrative actions that might adversely affect areas associated with traditional religious values. **FW-633** Opportunities should be provided for any such Native American groups to participate in the planning and development of activities which could adversely affect areas associated with traditional religious values. **FW-634**

    b. The Forest shall strive to protect Native American's rights to use and possess sacred objects on Forest lands, and protect and preserve the freedom of worship through ceremonial and traditional rites. **FW-635**

    c. The Forest should not deny access to Native Americans for any area confirmed as traditionally used in connection with tribal ceremonial or traditional rites. **FW-636**

6. The Forest shall maintain and implement an approved Affirmative Employment Plan and Special Emphasis Program Action Plan. **FW-637**

7. The Forest shall conduct compliance reviews to insure administrative actions meet civil rights, laws and regulations (Title VI, Civil Rights Act, 1964). **FW-638**

B. Information, Education and Outreach

1. Special efforts shall be made to inform the public, including minorities and underprivileged individuals and groups, of benefits they are eligible to receive from Forest programs. Techniques suited to increase awareness and participation shall be used. **FW-639** **FW-640**

2. The nonwork environment of employees and families shall be given consideration in our efforts to support and retain a diverse work force. **FW-641**

C. Facility and Site Management, Administration and Operation

Needs of physically challenged individuals shall be incorporated in the design of facilities, consistent with the Architectural Barriers Act (1968) and the Uniform Federal Accessibility Standards (36 CFR 1190). **FW-642**

Lands Program

A. Land Ownership Planning and Land Ownership Adjustment

1. Providing optimum patterns (Forest Land Ownership Plan, 1982) of land ownership within the Forest, considering resource goals and efficiency of managing the Forest, shall be emphasized. **FW-643**

2. All land ownership adjustment activities should be based on the Forest Land Ownership Plan. **FW-644**

B. Land Classifications

All National Forest System lands, and land in other ownerships within the Forest boundaries, shall be classified into the following land ownership groups: **FW-645**

1. **Group I** - Lands where Congress has either directly or indirectly instructed the Forest Service to retain ownership, or to acquire non-Federal lands for a designated purpose. Examples include: land tracts within congressionally designated wilderness or scenic areas. Management Area examples include A2, D-Series and E-Series.
2. **Group II** - Lands needed for special resource management and allocated for that purpose. (The objective is to retain national forest ownership and acquire lands in other ownerships.) Examples include: tracts identified as particularly key in accomplishing threatened, endangered or sensitive plant or animal recovery objectives; lands with special watershed, research, wildlife winter range, or sensitive viewshed resource values; lands contributing to Special Interest Areas; and tracts encompassing historically significant sites. Management Area examples include A3, A4, A8, A9, A13, B1, B2, B4, B5, B6, B7, B9, B10, B11 and B12.
3. **Group III** -
    a. Consolidated areas of National Forest System Lands that are generally solid blocks. (The objective is to retain these lands to maintain contiguous blocks.)
    b. Areas of mixed private and federal ownership. (The objective is to rearrange ownership patterns to benefit resource management goals and to utilize National Forest lands to acquire higher priority lands.)
    c. Isolated parcels that can best be managed by the Forest Service or some other public agency.
4. **Group IV** - Small isolated tracts of National Forest System lands situated away from contiguous blocks of National Forest System land. These lands are usually managed intensively for uses such as agriculture or recreation. (The objective is to make these lands available for disposal in exchanges to acquire lands in groups I & II.)
5. **Group V** - These are lands which need more intensive study and planning before land ownership decisions can be made. Land acquisition and disposal decisions will be deferred until completion of studies.

C. Land Adjustment

1. Lands that are acquired to meet Forest or resource management needs shall be those lands listed in the Forest Land Ownership Plan under the following priorities: **FW-646**

Land Classification Group	Priority
Group I	1
Group II	1
Group III	2

2. Forest lands made available for exchange for lands in other ownership shall follow the following priorities: **FW-647**

Land Classification Group	Priority
Group IV	1
Group III	2
Group II	3

D. Boundaries

Property boundaries shall be located prior to any ground disturbing, or timber harvest activities, that occur near or adjacent to Forest property lines. **FW-648**

E. Minerals Withdrawal

1. National Forest System lands shall be recommended for withdrawal from mineral entry **FW-649**
when Forest Service "Surface Management Regulations" (Public Law 84-167, Multiple
Use Surface Rights Act, 1955), 36 CFR 228 and 36 CFR 261 are inadequate to fully
protect Federal property and investments, prevent unnecessary or undue resource
degradation, protect fragile or endangered resource values, provide for national security
requirements, or protect public health and human safety. Withdrawals from entry under **FW-650**
the 1872 Mining Law shall be in conformance with section 204 of Public Law 94-579,
Federal Land Policy and Management Act, 1976.

2. See Forestwide Minerals Management Standards and Guidelines.

F. Rights-of-Way, Easement Acquisitions, and Cost-Share Agreements

Direction provided in Forest Service Manuals and guidelines found in Forest Service Handbooks shall be applied to Rights-of-way, easement acquisitions, and cost share agreements. **FW-651**

G. Utility and Transportation Corridors

1. Utility and transportation corridors shall be planned and located in a manner that consolidates the commitment of land to these uses and in a manner that minimizes ground, air traffic and visual resource disturbance (Regional Guide for Pacific Northwest Region, 1984), e.g. new powerlines should be buried. **FW-652**

2. Needs for new utility corridors shall be determined in accordance with regional criteria (FSM 2726 R-6 Supplement 7/78). New utility and transportation needs should be located to utilize existing corridors. **FW-653 FW-654**

3. Utility corridor resources shall be managed in accordance with specifications included in utility corridor implementation plans. **FW-655**

4. New corridor proposals that cross multi-jurisdictional areas shall be planned on an inter-agency basis (Regional Guide for Pacific Northwest Region, 1984). **FW-656**

5. Utility corridors should be assessed to identify compatible resource uses for lands within the corridors. Emphasis should be on realizing compatible resource benefits, e.g. providing for high quality deer and elk forage production within powerline corridors. **FW-657 FW-658**

6. Administrative activities necessary to manage existing utility corridors which cross multiple Management Areas should be allowed. **FW-659**

Administrative Sites

The following Standards and Guidelines are applicable to National Forest sites designated for administrative purposes, e.g. Ranger District compounds and Guard Stations. Forest Service administrative sites not on National Forest System lands, are also subject to the following applicable Standards and Guidelines. The intent of these Standards and Guidelines is to assure Forest Service buildings, utility systems, and related facilities are planned, developed, operated and maintained for safe use and provide for a healthful environment.

A. Recreation

1. Public education, information and interpretation regarding the National Forest and its surroundings shall be encouraged. **FW-660**

2. Recreation information and education sites shall be designed to encourage customer service. **FW-661**

3. Public access may be provided to cultural or biological features when conflicts with the functions of the administrative site or creation of security problems will not occur. See Forestwide Cultural Resource Standards and Guidelines. **FW-662**

4. Needs of physically challenged individuals shall be incorporated in the design of facilities, consistent with the Architectural Barriers Act (1968) and the Uniform Federal Accessibility Standards (36 CFR 1190). **FW-663**

B. Visual Resource Management

Visual quality objectives of the surrounding landscape shall be considered in development of Site Plans for administrative sites. **FW-664**

C. Wildlife and Fisheries

Opportunities for wildlife and fisheries management, habitat enhancement, interpretation and environmental education should be considered, if compatible with the use of the administrative site. **FW-665**

D. Range Management

Commercial livestock grazing shall not be permitted. **FW- 666**

E. Timber Management

1. Regulated timber harvest shall not occur. **FW-667**

2. Defective trees should be removed to protect life and property and may be removed as necessary to address insect attack, disease control, or catastrophic event concerns. **FW-668** **FW-669**

3. Trees may be removed to allow for facility expansion or vegetation rehabilitation. **FW-670**

F. Soil, Water, and Air Quality

1. A water right shall be acquired for all sources supplying water for domestic use or irrigation at administrative sites. Exceptions may occur when facilities are attached to public water systems. See Forestwide Water Standards and Guidelines. **FW-671**

2. Potable water systems shall be operated, maintained and/or upgraded consistent with National Primary Drinking Water Regulations (40 CFR 141), Oregon Administrative Rules (OAR Chapter 333 -61) and Forest Service direction (FSM 7400 and FSH 7409.11). **FW-672**

3. Potable water systems not consistent with public health requirements (item 2, above) shall be immediately upgraded or closed. **FW-673**

4. Waste water and sewage treatment facilities shall be operated, maintained and/or upgraded consistent Oregon Administrative Rules (OAR Chapter 340-71,72 and 73) and Forest Service direction (FSM 7400 and FSH 7409.11). **FW-674**

5. Waste water systems and sewage treatment facilities not consistent with public health laws (item 4, above) shall be upgraded or closed. **FW-675**

G. Minerals Management and Withdrawals

1. New administrative sites shall be withdrawn from mineral entry under the 1872 Mining Law if it is determined that a site cannot be protected through normal regulatory processes. **FW-676**

2. Common variety mineral material (e.g. sand and gravel) sources should not be developed within administrative sites. **FW-677**

H. Special Uses

Permits, leases, rights-of-way, or easements inconsistent with the purpose of the administrative site shall not be permitted. **FW-678**

I. Federal Energy Regulatory Commission License

Feasibility studies shall be conducted in a manner which does not interfere with operations of the administrative site. **FW-679**

J. Protection

1. All administrative sites shall have fire suppression plans. **FW-680**

2. All persons living on an administrative site, or regularly employed at an administrative site, shall have a basic understanding of the fire prevention/suppression plan for that facility and a working knowledge of the location and use of fire fighting equipment available. **FW-681**

Special Uses

A. All special use permits (recreation and non-recreation) issued shall be consistent with the Management Area management direction within which they are located. Linear feature Special Uses, e.g. powerline corridors, that cross multiple Management Areas may be excluded. **FW-682** **FW-683**

B. Minerals Management

1. Special Use permit development shall consider valid existing mineral rights and provide for mineral resource exploration and development activities (see Forestwide Minerals Management Standards and Guidelines). **FW-684**

2. Areas under special use permit or proposed for special use permit shall be recommended for withdrawal from mineral development if other resource values cannot be adequately protected (see Forestwide Lands Program Standards and Guidelines). **FW-685**

C. Recreation Special Uses

1. Dispersed recreation and recreation developments which are compatible with existing special use permits, leases, or rights-of-way may occur. Recreation uses within existing permit areas shall be terminated if incompatible with the special use. **FW-686** **FW-687**

2. Commercial recreation developments (e.g. resorts, stores, and boat docks) should not occur at Timothy or Clear Lakes. Forest Service administered concessionaire activities (e.g. campgrounds) may occur. **FW-688** **FW-689**

3. Recreation special use permits may be issued if: **FW-690**

   a. A public service need is demonstrated.

   b. The requested special use applies to a substantial number of recreating Forest visitors.

4. Public benefits should be considered when issuing recreation special use permits. **FW-691**

5. When recreation special use permits are issued, the following shall be applied: **FW-692**

   a. The recreation experience provided under the permit shall be compatible with the Management Area management direction in which the special use occurs. **FW-693**

   b. The number of recreation special use permits issued shall not exceed the estimated capacity of the desired recreation opportunity. **FW-694**

   c. Permit stipulations and facilities shall be designed to minimize impacts on other Forest users and Forest resources. **FW-695**

6. New recreational residence special use permits (e.g. Zigzag area summer homes, see A10 Developed Recreation Management Area Standards and Guidelines) shall not be issued. **FW-696** Permits for "in lieu" lots within existing permitted tracts may be considered to meet other land management objectives. **FW-697**

D. Non-Recreation Special Uses

1. Permits, leases, and rights-of-way not consistent with Management Area management direction shall be terminated as soon as possible; or the stipulations or requirements on existing permits (including long-term historical permits) shall be negotiated to meet current management direction. **FW-698** **FW-699**

2. Special uses which can be accommodated on non-National Forest System (NFS) lands should not be permitted on NFS lands. Support facilities for private developments should not occur on NFS lands when non-NFS lands are available for such support needs. **FW-700** **FW-701**

3. When a special use permit area is no longer in use, it shall be rehabilitated. **FW-702**

4. Dams within the Mt. Hood National Forest shall be operated, maintained, and managed in a manner consistent with public laws and shall provide for safe conditions for Forest visitors. **FW-703** **FW-704**

5. All water diversions from fish bearing streams shall have screening facilities to preclude fish access into the diverted water (Oregon Revised Statute 509-615) **FW-705**

6. Water transmission corridors (e.g. irrigation ditches) should not be considered riparian zones with regard to application of Forestwide Riparian Area or B7 General Riparian Standards and Guidelines. **FW-706** Riparian related values within water transmission corridors should be considered and emphasized; however, water transmission related values stipulated in the special use permit should predominate. **FW-707** See Forestwide Riparian Standards and Guidelines regarding irrigation water routed through natural riparian areas. **FW-708**

Special Forest Products

A. The use and management of all commercial products from the Forest, including the Special Forest Products listed below, should be encouraged. **FW-709**

B. The following Special Forest Products should be available to the public where consistent with Management Area management direction. Exceptions of availability shall be A2 Wilderness, A3 Research Natural Areas, and adjacent to A10 Developed Recreation Management Areas, as well as, habitat for threatened, endangered and sensitive plants and animals. **FW-710** **FW-711**

1. House logs and posts (7"-16" diameter)
2. Miscellaneous poles up to 30 feet in length and 6" diameter on the large end (fence and corral poles).
3. Stakes to 3" diameter on the large end (snow, fence, and hop).
4. Posts (split cedar) from unmerchantable logs 6" to 8" diameter, and up to 9 feet in length.
5. Shake bolts (cedar).
6. Cordwood fuel (firewood).
7. Seed cones (all species).
8. Dry cones.
9. Christmas trees (cut trees), both for commercial and personal use.
10. Transplants, both shrubs and trees (less than 6 feet tall).
11. Boughs.
12. Beargrass.
13. Mushrooms.
14. Forest greens (huckleberry, salal, Oregon grape).
15. Mosses and ferns.
16. Medicinal Forest products.
17. Landscape rock.
18. Other products may be available at the discretion of the Forest.

C. Collection quantities of special Forest products may be limited to prevent over-utilization of the resource. **FW-712**

D. Products other than those listed above may be sold if the resources can be managed with acceptable environmental effects. **FW-713**

Management Prescriptions

Management prescriptions have been developed for 46 different "Management Areas". Each acre within the Forest boundary has been assigned one of these Management Area (MA) types.* A given MA may be either a single parcel of land or a collection of parcels spread throughout the Forest. For example, the "A2 Wilderness" Management Area is assigned to 6 separate parcels. Approximate locations of the MAs are displayed on the Preferred Alternative (Alternative Q) map and the supplemental Wildlife Resources Map accompanying this document. A Forest Plan Control Map, the authoritative reference for interpreting and implementing the spatially-related management direction, will be maintained in the Mt. Hood National Forest, Forest Supervisor's Office.

Twenty-five of the 46 MAs are distinct, unique prescriptions. The remaining 21 MAs are variations of the first 25, designed for special congressionally designated portions of the Forest. The Bull Run Watershed Management Unit (Public Law 95-200) and the Columbia River Gorge National Scenic Area (1986) have 11 and 10 MAs, respectively.

MAs are multi-resource oriented, but they differ from each other in their primary resource emphasis (or emphases). Some MAs provide conditions necessary for a single resource or facet of a resource (e.g. A13 Bald Eagle Habitat Area); however, each MA always produces a mix of resource outputs and services.

Table Four - 5 displays the 46 MAs separated into 5 categories, i.e. A, B, C, D and E. Category "A" MAs have primary resource emphases other than timber production; regulated timber harvest is not allowed, but timber salvage may in some cases be considered. Category "B" MAs also have primary resource emphases other than timber production, but regulated timber production is planned. The Category "C" MA (i.e. C1 Timber Emphasis) has timber production as the primary emphasis and a variety of secondary other resource emphases. The "D-Series" Category represents MAs within the Bull Run Watershed Management Unit.** Production of high quality water is the primary resource emphasis but a variety of other resource values are realized as well. Columbia River Gorge National Scenic Area is represented by an "E-Series" of MAs; scenic quality and recreation are primary emphases, with other resource values also recognized.

*Portions of the Mt. Hood National Forest within the Columbia River Gorge National Scenic Area, but outside the Forest boundary, are not identified with MA designations.

**The Bull Run Watershed Management Unit D-Series MAs are intended to be consistent with the Bull Run Watershed Environmental Impact Statement (1979).

Each portion of the Forest has only one MA identifier assigned to it; however, in some cases, MA identification is not completely straight forward. As an example, an area called Gumjuwac - Tolo is labelled as A3 Research Natural Area within the A2 Badger Creek Wilderness. In this case, the Wilderness congressional designation has not been changed, i.e. the Wilderness designation has been coupled with a Research Natural Area opportunity. Similarly other opportunities have also been identified within A2 Wilderness, i.e. A8 Northern Spotted Owl Habitat Area and A9 Key Site Riparian. An additional example deals with Wild and Scenic River Corridors; these Corridors, identified as B1 MAs, do not always have a B1 designation. The congressionally designated corridors exist in their entirety (see Designated Viewshed Map); however, where more restrictive resource emphases were selected, the B1 designation was overridden by other MA types, e.g. A4 Special Interest Area, A2 Wilderness and B8 Earthflow.

MA management prescriptions each include 4 distinct components, i.e. a Goal statement, Location, Desired Future Condition and a set of Standards and Guidelines.

In those portions of the Forest where two Management Area prescriptions overlap and both prescriptions apply to activities on the ground, a combination of the Goals, Desired Future Conditions and Standards and Guidelines are intended to be realized. When the two sets of Standards and Guidelines are not consistent, the Standards and Guidelines which are most restrictive to vegetation and access management predominate.

Table Four-25 Category A, B, C, D and E Management Areas are displayed. The total acreage of each Management Area is identified; however, overlapping MA prescriptions are not recognized.

Table Four - 25 Category A, B, C, D and E Management Areas

Management Area	Total Acreage
A2 Wilderness	186,200
A3 Research Natural Area	1,150
A4 Special Interest Area	38,800
A5 Unroaded Recreation	16,550
A6 Semi-Primitive Roaded Recreation	5,000
A7 Special Old Growth	2,000
A8 Northern Spotted Owl Habitat Area	66,050
A9 Key Site Riparian	14,700
A10 Developed Recreation	1,700
A11 Winter Recreation Area	11,700
A12 Outdoor Education Area	100
A13 Bald Eagle Habitat Area	700
B1 Designated Wild, Scenic, and Recreational River	13,650
B2 Scenic Viewshed	113,650
B3 Roaded Recreation	9,650
B4 Pine-Oak Habitat Area	11,550

B5 Pileated woodpecker/Pine Marten Habitat Area	44,950
B6 Special Emphasis Watershed	76,600
B7 General Riparian Area	91,550
B8 Earthflow	25,800
B9 Wildlife/Visual Area	3,750
B10 Deer and Elk Winter Range	8,700
B11 Deer and Elk Summer Range	5,150
B12 Backcountry Lakes	3,900
C1 Timber Emphasis	187,825
D Bull Run Watershed Management Unit	91,000
DA1 Bull Run Physical Drainage	38,025
DA2 North Buffer - No Regulated Harvest	1,450
DA3 Research Natural Area	4,400
DA8 Northern Spotted Owl Habitat Area	13,300
DA9 Key Site Riparian	1,050
DA13 Bald Eagle Habitat Area	75
DB2 Scenic Viewshed	950
DB5 Pileated woodpecker/Pine Marten Habitat	6,850
DB7 General Riparian Area	10,800
DB8 Earthflow	50
DC1 Timber Emphasis	14,050
E Columbia River Gorge National Scenic Area	33,875
EA1 Scenic Area	15,500
EA4 Special Interest Area	75
EA8 Northern Spotted Owl Habitat Area	10,550
EA9 Key Site Riparian	250
EA10 Developed Recreation	
[illegible]A12 Outdoor Education Area	300
EA13 Bald Eagle Habitat Area	150
EB2 Scenic Viewshed	1,300
EB5 Pileated woodpecker/Pine Marten Habitat Area	2,050
EB7 General Riparian Area	3,700

Category "A" Management Areas

The following 12 Management Areas have goals that do not include regulated timber production. With the exception of A2 Wilderness, these MAs allow timber harvest to occur as a tool to accomplish primary goals. In some cases, timber salvage is also allowed.

• A2	Wilderness
• A3	Research Natural Area
• A4	Special Interest Area
• A5	Unroaded Recreation
• A6	Semi-Primitive Roaded Recreation
• A7	Special Old Growth
• A8	Northern Spotted Owl Habitat Area
• A9	Key Site Riparian Area
• A10	Developed Recreation Sites
• A11	Winter Recreation Areas
• A12	Outdoor Education Area
• A13	Bald Eagle Habitat Area

Cross country skiing; Salmon River Basin.

A2 Wilderness

Mt. Hood Wilderness

Goal

Promote, perpetuate and preserve the wilderness character of the land; protect watersheds and wildlife habitat; preserve scenic and historic resources; and promote scientific research, primitive recreation, solitude, physical and mental challenge, and inspiration.

Wilderness Resource Spectrum (WRS) Goals

Transition Zone

Manage recreational use to eventually reach semi-primitive trailed settings.

Semi-Primitive Trailed Zone

Provide for a predominately unmodified natural area of moderate to large size where concentrations of recreational users is typically low, but evidence of human use is visible.

Primitive Trailed Zone

Provide an essentially unmodified environment where the concentration of recreational users is low and evidence of human use in minimal.

Location

This Management Area applies to the 186,200 acres of Congressionally designated wilderness areas on the Forest. These wilderness areas are: Mt. Hood, Bull of the Woods, Salmon-Huckleberry, Badger Creek, Columbia, and portions of Mt. Jefferson. These areas are characterized by clear, cold lakes and streams, outstanding views of majestic mountains, extreme topgraphic relief, young and old growth forests, alpine meadows and rocklands.

A2 Management Areas are mapped as part of the preferred alternative (see Alternative Q in the accompanying map packet). Other Management Areas, i.e. A3, A8 and A9, are delineated by dashed lines as inclusions within A2 on the preferred alternative map. Additional Management Areas representing Management Requirements, e.g. B7 General Riparian Area (unmapped) and B5 Pileated Woodpecker/Pine Marten Habitat Area (see Wildlife Resources map, Supplement to Alternative Q), are also inclusions within A2 Wilderness. All of these Management Area inclusions are subsets of A2 Wilderness; the A2 prescription as well as the A3, A8, A9, B5 and B7 prescriptions apply to the corresponding inclusions, consistent with the wilderness resource values and the Wilderness Act, 1964.

Desired Future Condition

Major Characteristics

- An area of undeveloped land retaining its primeval character and influence.
- Generally appears to have been affected primarily by the forces of nature, evidence of human effects are minimal.
- Has outstanding opportunities for solitude or a primitive and unconfined type of recreational experience.
- May contain ecological, geological, or other features of scientific, educational, scenic or historical value.
- Outstanding natural characteristics, based on their landform, ecosystem, associated wildlife, and location.
- No motorized or mechanical equipment.
- Minimal evidence of human-induced restrictions and controls.

Sensory Perceptions:

- In the Semi-Primitive Trailed Zone: solitude, physical and mental challenge, inspiration and connectedness to the natural environment may be experienced, the sights and sounds of human activity will be present, but will be subordinate to the wilderness experience/environment.
- In the Primitive Trailed Zone: solitude, physical and mental challenge, inspiration and connectedness to the natural environment will be experienced with few intrusions from the sight and sounds of human activity.

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A2 Wilderness

Standards and Guidelines

A. Dispersed Recreation

1. Permanent structures or facilities shall not be allowed unless determined to be historically significant, essential to preserve a national historic site, or otherwise authorized by provision of the Wilderness Act (1964), Oregon Wilderness Act (1984) or other legislation. **A2-001**

2. Toilets of a primitive type shall be provided only for the protection of wilderness values and where there is a hazard to health and safety. **A2-002**

B. Wilderness Coordination and Use Administration

1. The Limits of Acceptable Change (LAC) System (FSM 2322, R6 Supp. 2300-90-1, 8/90) shall be implemented for validating the existing wilderness carrying capacities for each Wilderness during the first decade of implementation of this Plan. **A2-003** Recreational use should not exceed the estimated existing carrying capacities (measured in recreation visitor days, RVDs) displayed in Table Four-26. **A2-004**

Table Four-26 Wilderness Estimated Carrying Capacity

Wilderness Area	Estimated Carrying Capacity (RVDs)
Columbia	29,827
Badger Creek	19,155
Salmon-Huckleberry	33,352
Bull of the Woods	20,530
Mt. Hood	36,118
Mt. Jefferson	4,948

2. All management activities shall meet the following Limits of Acceptable Change (FSM 2322, R6 Supp. 2300-90-1, 8/90) standards by Wilderness Resource Spectrum (WRS) class: **A2-005**

   a. Semi-Primitive (and Transistion) WRS:

      1) Biophysical Standards:

         a) Exposed mineral soil without a duff layer may be present on 75% of the area around a campsite as well as at key interest points. **A2-006**

         b) Loss of ground cover shall not exceed 400 square feet at any one site or 1 percent of any acre. **A2-007**

c) Tree roots may be exposed on 25 percent of the trees at destination locations. A2-008

d) Some "improvements" such as fire rings, firewood stashes, or log or stone seats may occur as long as they are in keeping with the setting. A2-009

e) Campsites shall, where physically possible, be separated from other campsites, and set back 200 feet from lakes, streams, trails, meadows, and key interest features to minimize the degree of disturbance to the natural ecosystem. A2-010

2) Social Standards:

a) Encounters with other groups shall be limited to no more than 10 groups per day during 80 percent of the primary recreational use season. A2-011

b) No more than 2 other campsites shall be visible or continuously audible from any other site. A2-012

c) Group size should not exceed 12 in any combination of people and recreational livestock. A2-013

d) Groups exceeding 12 shall be allowed only under a permit. The maximum group size under permit shall not exceed 30 in any combination of people and recreational livestock. A2-014

b. Primitive Trailed WRS:

1) Biophysical Standards:

a) Ground vegetation may be flattened or show some wear and tear, but should not be permanently injured, and should be able to recover in two growing seasons. A2-015 A2-016 A2-017

b) The loss of ground cover at heavily-used recreational sites shall not exceed 200 square feet at any one site or 0.5 percent of any acre. A2-018

c) Exposed mineral soil without a duff layer may be present, but shall not exceed 25 percent of a particular site. A2-019 A2-020

d) Camping sites may be easily recognized from short distances but shall blend in with the natural setting from a distance. A2-021 A2-022

e) Tree roots may be exposed on 10 percent of the trees at destination locations. Campsites shall be separated from other campsites and should, where physically possible, be set back 200 feet from lakes, streams, trails, meadows, and key interest features to minimize the degree of disturbance to the natural ecosystem, and reduce social encounters at campsites. A2-023 A2-024 A2-025

2) Social Standards:

a) Encounters with other groups shall be limited to no more than 6 groups per day during 80 percent of the primary recreational use season. A2-026

b) No more than 1 other campsite shall be visible, or continuously audible, from any other site. A2-027

c) Group size should not exceed 12 in any combination of people and recreational livestock. A2-028

d) Groups exceeding 12 shall be allowed only under a permit. The maximum group size under permit shall not exceed 30 in any combination of people and recreational livestock. A2-029 A2-030

3. If the carrying capacity validation indicates that use levels for a particular Wilderness, or a specific area within a Wilderness have exceeded the estimated carrying capacity as established through the Limits of Acceptable Change, the following corrective actions shall be taken subject to approval by the Forest Supervisor (see Forest Plan Appendix B for examples): A2-031

    a. The First Action shall be public information and site restoration. A2-032

    b. The Second Action shall be use of regulations, i.e. if the first action is unsuccessful, restrict recreational activities by regulation. A2-033

    c. The Third Action shall be to restrict number of users. If the first and second actions are unsuccessful, restrict mumbers of visitors to carrying capacity level. A2-034

    d. The Fourth Action shall be to close the area to all users. If the first, second, and third actions are unsuccessful, close the area to all recreational use until the area is rehabilitated and restored to wilderness condition. A2-035

4. Each Wilderness shall be managed as a single unit regardless of administrative boundaries. A2-036

5. Where conflicting uses occur, preference shall be given to those uses which: A2-037

    a. Are most dependent upon the wilderness environment and cannot be accommodated elsewhere.

    b. Least affect the wilderness environment.

6. Pre-existing or historical uses of wilderness, which are authorized by wilderness legislation, shall adhere to the original conditions of the legislation. A2-038

7. Scientific studies, research, and educational programs may occur within wilderness provided they do not degrade wilderness values. A2-039

8. Grazing of recreational livestock, such as saddle horses, pack stock and llamas, may occur. Use of pelletized feed should be encouraged. Stock shall be tethered, where physically possible, at least 200 feet from lakes, streams, travel routes, and key interest areas, and out of sight of camp areas. A2-040 A2-041 A2-042

9. The use of motorized or mechanized equipment, except small battery-powered-hand-held devices, such as cameras, shavers, or flashlights, shall be prohibited unless authorized by the Forest Service. Wheelchairs may be permitted. A2-043 A2-044

10. Pets shall be under reliable voice control or should be under physical restraint while in the Wilderness, and may be prohibited in some areas. A2-045 A2-046 A2-047

11. Trails may be constructed, reconstructed, and/or relocated in accordance with WRS objectives. A2-048

    a. Trails shall be maintained in a manner consistent with the WRS objectives, and to meet minimum requirments for health and safety. A2-049

    b. In Primitive Trailed WRS zones only the minimum trail system necessary to protect resources, provide for visitor safety, and to disperse users shall be provided. A2-050

12. Signing within wilderness shall not be provided for environmental interpretation. A2-051

13. Directional signing may occur. **A2-052**

14. Temporary regulatory or informational signs may be used in situations where control of excessive resource damage is needed and other corrective actions have been unsuccessful. **A2-053**

C. Visual Resource Management

All management activities within the wilderness boundary shall meet the Preservation visual quality objective (VQO) as viewed from within wilderness.

D. Cultural Resources Management

See Forestwide Cultural Resources Management Standards and Guidelines.

E. Wildlife and Fisheries

1. Fishing and hunting should be permitted per Oregon State Regulations. Wildlife control measures may be applied in coordination with Oregon Department of Fish and Wildlife (ODFW). Predater-prey relationships should be allowed to play their natural role within the ecosystem. **A2-054 A2-055 A2-056**

2. Natural ecological processes, including natural infestations of insects, should be allowed to operate freely. **A2-057**

3. Wildlife and fish indigenous to the area immediately prior to designation as wilderness should be maintained. Preservation of threatened, endangered and sensitive (T&E) species shall be emphasized. T&E recovery and enhancement activities may occur. **A2-058 A2-059 A2-060**

4. Improvements and activities necessary for wildlife and fisheries management may be permitted and maintained. Work should be performed with nonmotorized equipment. **A2-061 A2-062**

5. Reestablishment of native species or establishment of T&E species should be permitted. **A2-063**

6. Barren lakes may be considered for fish stocking after mutual agreement (i.e. between ODFW and Forest Service) that scientific and wilderness values are not affected. **A2-064**

7. Stocking of fishing waters may be permitted where this practice is of record prior to wilderness designation. Aerial stocking may be permitted. **A2-065 A2-066**

F. Range Management

1. Commercial livestock grazing may be permitted on any grazing allotment where a grazing permit was in existence at the time of wilderness designation and there is documentation of grazing use immediately prior to wilderness designation. See A3 Research Natural Area Standards and Guidelines. **A2-067**

2. Vacant grazing allotments should be phased out. **A2-068**

3. Commercial livestock range improvements, e.g. fencing, shall be prohibited. **A2-069**

G. Vegetation Management

1. Timber harvesting and commercial gathering of forest products shall not be permitted. Vegetation management activities shall protect or enhance wilderness values. **A2-070** **A2-071**

2. Live trees may be cut for administrative purposes, e.g. trail bridge construction. **A2-072**

3. Wood fires and/or firewood gathering may be prohibited in areas where impacts from firewood gathering are degrading wilderness resource values. **A2-073**

4. Areas that do not meet WRS bare ground and vegetative cover criteria (see B.2, above) shall be revegetated. **A2-074**

   a. Only native local species shall be used for site revegetation. **A2-075**

   b. Areas to be revegetated may be closed to public use until vegetation is re-established. Temporary signing or fencing may be used. **A2-076** **A2-077**

   c. Revegetation work should be achieved in a manner that best fits the needs of the individual site. Work should be accomplished by the use of any or all of the followng practices: **A2-078** **A2-079**

      1) Visitor use may be restricted or eliminated on a temporary basis to allow natural revegetation to occur. **A2-080**

      2) Fertilizer and growth hormones may be used on a limited basis. **A2-081**

5. Pesticide use shall be prohibited. **A2-082**

6. Introduction of non-native plant species should not occur. **A2-083**

H. Soil, Water, and Air Quality

1. Acceleration of soil displacement and erosion resulting from human activity should not occur. **A2-084**

2. Natural plant establishment and growth due to soil compaction should not be impaired except at designated camps, administrative sites, and on trails. **A2-085**

3. Natural water quality of streams and lakes shall not be degraded by human activity. **A2-086**

4. Natural stream and riparian ecological processes shall be allowed to operate freely. **A2-087**

5. Pre-existing water impoundments, diversions and other structures may be maintained at a level consistent with enabling Wilderness legislation. **A2-088**

6. Air Quality Related Values existing in Class I Wilderness shall be protected consistent with the Clean Air Act (1977). **A2-089**

7. See Forestwide Air Quality Standards and Guidelines for Class II Wilderness.

I. Minerals Management

1. Wilderness shall be withdrawn from mineral entry and mineral leasing. Valid existing rights to conduct mineral related activities should be permitted. Limited prospecting may occur (36 CF2 228). **A2-090** **A2-091** **A2-092**

2. Mineral operations in wilderness shall be conducted to preserve wilderness character of the lands involved with the legal rights of claimants and lessees (1872 Mining Law). **A2-093**

J. Geology

Natural geologic processes shall be allowed to operate freely. **A2-094**

K. Lands and Special Uses

1. Special uses, permits, licenses, easements, patent applications, and rights-of-way applications for uses shall not be approved, or reissued, except for those consistent with the Wilderness Act (1964 and 1984) and/or CFR. **A2-095**

2. Special use permits may be issued for outfitter-guide type activities. **A2-096**

3. When recreational carrying capacities are reached or exceeded, public recreational use should be favored over commercial use, unless commercial use can best achieve wilderness management objectives. **A2-097** Commercial use shall not be permitted in heavy recreational use areas if commercial use is found to have an adverse effect on the wilderness experience of other recreational users. **A2-098**

4. Contests, races, promotions, or fund raisers of any kind shall be prohibited, i.e. including foot races, competitive trail rides, survival contests, and other similar activities. **A2-099**

5. Special uses that do not meet Management Area management direction (i.e. non-conforming) shall be terminated. **A2-100**

6. Military training exercises should not be permitted. **A2-101**

L. Transportation Systems/Facilities; Travel and Access Management

1. Roads shall not be constructed. **A2-102**

2. Existing roads and wheel tracks (except those specifically authorized by wilderness legislation) shall be blocked, stabilized and returned to a natural condition. **A2- 103**

3. Off-road vehicle use shall be prohibited. **A2-104**

4. **Possessing or using a hang-glider, paraglider or bicycle shall be prohibited.** **A2-105**

5. **Landing of aircraft, or dropping or picking up of any material, supplies or person from aircraft, shall be prohibited unless specifically authorized by the Forest Service.** **A2-106**

M. Fire Prevention and Suppression

1. Preference shall be given to those suppression methods and strategies resulting in the least practicable area burned, commensurate with cost-effectiveness, and having the least effect on wilderness values. **A2-107**

2. Human-caused wildfires shall be suppressed. **A2-108**

N. Prescribed Fire

1. Prescribed fire may occur. **A2-109**

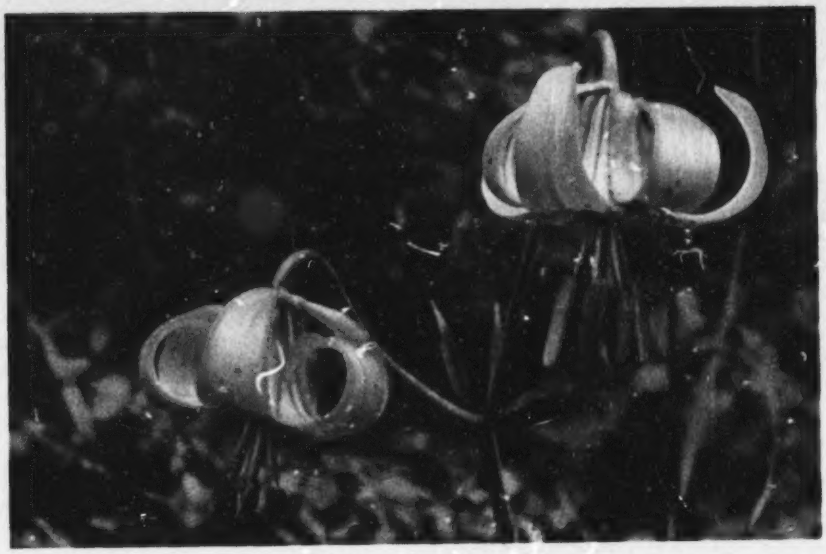
2. Naturally occurring ignitions should be managed as prescribed fire unless declared a wildfire. **A2-110**

3. Management ignited prescribed fires should be considered where analysis has shown that the wilderness ecosystem has been significantly altered from its natural state due to fire exclusion, and the probability of natural ignitions returning the area to its natural state is low. **A2-111**

O. Integrated Pest Management

Insect or plant disease outbreaks may be controlled only to prevent unacceptable damage to resources on adjacent lands or an unnatural loss to the wilderness resource due to exotic pests. **A2-112**

A3 Research Natural Area



Columbia Lily

Goal

Preserve examples of natural ecosystems in an unmodified condition for research and education and to provide areas to serve as a baseline against which human impacts on natural systems can be measured.

Location

These Management Areas are located throughout the Forest, fulfilling needs identified by the Oregon Natural Heritage Plan.

Research Natural Areas	Acres
Mill Creek	815
Bagby	560
Gumjuwac-Tolo*	3,600
Total	4,975

* Proposed Research Natural Areas

Note: See DA3 Management Area for RNAs within the Bull Run Watershed Management Unit

A3 Management Areas are mapped as part of the preferred alternative (see Alternative Q in the accompanying map packet). The Gumjuwac-Tolo A3 RNA lies within the Badger Creek A2 Wilderness Management Area and is indicated on the Alternative Q map with dashed boundary lines. A2 and A3 prescriptions both apply to the Gumjawac-Tolo RNA, however, the A2 prescription predominates.

Other Management Areas representing Management Requirements, e.g. B7 General Riparian Area (unmapped) and B5 Pileated Woodpecker/Pine Marten Habitat Area (see Wildlife Resources Map, Supplement to Alternative Q), are inclusions within A3 Management Areas. A3 prescriptions predominate over B5 and B7 prescriptions.

Desired Future Condition

Major Characteristics

- Contains a representative or unique plant community and serves as a gene pool reserve for native plant and animal species.
- Natural processes in undisturbed conditions predominate.
- Provides opportunities for research and studies of natural processes.
- Public recreational use is not encouraged.
- Limited access provided indirectly via nearby roads and directly via trails.

Sensory Perceptions

- Feeling of isolation from sights and sounds of humans.
- Feeling of being in a protected area.
- Evidence of scientific research may be present.

A3 Research Natural Area

Standards and Guidelines

A. Administration

1. Management activities should be confined to research and/or studies consistent with needs determined by the Pacific Northwest Research and Experiment Station (PNW). **A3-001**

2. Representative plant communities which currently exist within individual Research Natural Area boundaries shall be maintained. **A3-002**

B. Dispersed Recreation

1. Dispersed recreation facilities should be limited to those needed for research and education as determined by PNW. **A3-003**

2. Dispersed recreation use shall be discouraged if it would compromise the research values of the RNA. **A3-004**

3. Trails for dispersed recreation purposes which may conflict with RNA values shall not be constructed or reconstructed. **A3-005**

4. Off-road vehicle (ORV) and non-motorized bicycle use shall be prohibited. RNAs shall be posted as closed to ORV and non-motorized bicycle use. **A3-006** **A3-007**

C. Developed Recreation

1. Recreational facilities and developed recreational site construction and reconstruction shall not occur. **A3-008**

2. Developed recreational use shall be prohibited. **A3-009**

D. Visual Resource Management

The visual quality objective shall be Preservation for all areas within A3 RNA boundaries, as viewed from trails and existing roads within A3 boundaries. **A3-010**

E. Cultural Resources Management

See Forestwide Cultural Resources Management Standards and Guidelines.

F. Wildlife and Fisheries

1. Surveys and planning related to threatened and endangered (T & E) or sensitive species or unusual combinations of fauna may be conducted. **A3-011**

2. Fish habitat surveys and planning may be conducted. **A3-012**

3. Habitat improvement or maintenance work should be consistent with the natural ecological processes and should occur only where shown consistent with Management Area management direction. **A3-013** **A3-014**

G. Range Management

1. Grazing by commercial livestock shall be prohibited, except as authorized under legislation, e.g. Oregon Wilderness Act (1984). Livestock grazing should be discouraged within Gumjuwac-Tolo RNA within Badger Creek Wilderness. **A3-015** **A3-016**

2. Domestic livestock management structures shall not be permitted except where necessary for protection of RNA values, e.g. fences to exclude livestock. **A3-017**

3. Introduction of non-native plant species shall be prohibited. **A3-018**

H. Timber Management (outside of A2 Wilderness)

1. Regulated timber harvest shall not be permitted. **A3-019**

2. Vegetation management shall not be allowed unless part of an approved research project. Vegetation manipulation activities shall be in accordance with the Vegetation Management FEIS, Record of Decision 1988, and Mediated Agreement, 1989. **A3-020** **A3-021**

3. Timber salvage operations should not occur unless part of an approved research project. **A3-022**

4. Hazard trees may be cut or knocked down, but should not be removed from the site. **A3-023** **A3-024**

5. Firewood gathering shall be prohibited. **A3-025**

I. Soil, Water and Air Quality

1. Improvement, maintenance, or monitoring activities may take place as necessary to establish a baseline for determining effects of land management practices on terrestrial and/or aquatic systems. **A3-026**

2. Temporary gauging stations and instrument shelters may be established. **A3-027**

J. Minerals Management

RNAs shall be recommended for withdrawal from mineral entry, under the mining (1872 Mining Law) and mineral leasing laws. Provisions shall be made for existing valid mining and leasing rights. **A3-028 A3-029**

K. Geology

Technical inventory, evaluation, and site-specific investigation may occur, but shall not have a detrimental effect on the natural, unmodified condition of the area. **A3-030 A3-031**

L. Lands and Special Uses (outside of A2 Wilderness)

1. Special uses inconsistent with Management Area management direction shall not be allowed. **A3-032**

2. New rights-of-way shall not be permitted. **A3-033**

3. RNA boundaries should be marked in the field. As a minimum, all corners or turning points should be monumented. **A3-034 A3-035**

M. Transportation Systems/Facilities; Travel and Access Management

1. New permanent road construction shall be prohibited. Temporary roads should be discouraged but may be allowed to facilitate approved research activities. **A3-036 A3-037 A3-038**

2. Reconstruction and/or maintenance of existing facilities shall be allowed to protect resources and for maintenance of natural unmodified conditions. **A3-039**

3. All forms of off-road vehicle use shall be prohibited. **A3-040**

4. Foot travel and equestrian use should be discouraged. **A3-041**

5. New permanent road building shall be prohibited. **A3-042**

N. Fire Prevention and Suppression

1. See Forestwide Forest Protection Standards and Guidelines for Fire Prevention.

2. Preference should be given to fire suppression methods and strategies resulting in the least practicable area burned, commensurate with cost-effectiveness, and having the least effect on the studies and values in the Research Natural Area. **A3-043**

3. Human-caused wildfires shall be suppressed. Application of fire retardant or use of tractors should not occur during fire suppression actions. **A3-044 A3-045**

4. Fire rehabilitation activities shall be consistent with RNA management direction. **A3-046**

O. Prescribed Fire

1. Prescribed fire may occur. **A3-047**

2. Unless required to provide protection to adjacent non-RNA acreage, fuels treatment shall not occur where the sole purpose of the project is fire hazard reduction. **A3-048**

3. A naturally occurring ignition (e.g. fire start due to lightining) should be managed as a prescribed fire unless declared a wildfire. **A3-049**

P. Integrated Pest Management

1. Actions to control endemic insects or diseases should not be undertaken. If control measures are deemed necessary (i.e. as documented in an environmental assessment public document), biological control measures shall be considered. **A3-050**

2. Any pest management actions considered shall be coordinated with the Pacific Northwest Research and Experiment Station. **A3-051**

A4 Special Interest Area

Goal

Protect and, where appropriate, foster public recreational use and enjoyment of important historic, cultural, and natural aspects of our national heritage. Preserve and provide interpretation of unique geological, biological, and cultural areas for education, scientific, and public enjoyment purposes.

Location

These Management Areas (Table Four-27) are individually mapped and scattered across the Forest. Each area contains unusual scenic, historical, archaeological, geological, botanical, zoological, paleontological, or other special characteristics.

A4 Management Areas are mapped as part of the preferred alternative (see Alternative Q in the accompanying map packet). Other Management Areas representing Management Requirements, e.g. B7 General Riparian Area (unmapped) and B5 Pileated Woodpecker/Pine Marten Habitat Area (see Wildlife Resources map, supplement to Alternative Q, in the map packet), are inclusions within some A4 Management Area boundaries. B7 and B5 Management Area prescriptions, as well as the A4 prescription, apply to these corresponding inclusions.

Table Four-27 Special Interest Areas

Special Interest Areas	Acres	Emphasis
Barlow Tollgate	1	Historic
Little Crater Lake	373	Geologic
Olallie Lake	13,175	Scenic
Barlow Road	5,945	Historic
Roaring River (including Mitchell Flats)	12,449	Scenic
Lost Lake	949	Scenic/Recreation
Bagby Hot Springs	854	Geologic
Sugar Pine Botanical Area	35	Botanic
Squaw Meadows	774	Botanic
Parkdale Lava Beds	854	Geologic
Cloud Cap-Tilly Jane	1,486	Historic
Clackamas Lake	253	Historic
Old Maid Flat	1,497	Geologic
Stringer Meadows	110	Botanic
Total Acres in A4	38,755	

Note: See EA4 Management Area for Special Interest Areas within Columbia River Gorge National Scenic Area, i.e. Columbia Gorge Old Wagon Road (65 acres) and Oneonta Gorge (10 acres).

Desired Future Condition

Major Characteristics

- Each area is uniquely formed by natural forces or historic human achievement.
- Each area is unique by itself, and presents its own special set of values and experiences.
- Provides interpretive opportunities.
- Predominately natural appearing environment.
- Dispersed, natural settings for recreation, learning, and reflection.
- Special characteristics, such as:
  - Massive lava flows.
  - Glacial cirque basins.
  - High elevation meadows and forests.
  - Hot springs.
  - Outstanding views of majestic mountains.
  - Old growth forests.
  - Unique plant communities.
  - Unique combinations of geology, ecology, and hydrology.
  - Interpretive trails and visitor points.
  - Historic buildings and travel routes.

Sensory Perceptions

- Expansive vistas.
- Solitude.
- Sense of curiosity and discovery.
- Inspirational.
- Physically challenging.
- Sights, sounds, and smells associated with humans are evident, but subordinate to the experience.
- Sense of kinship and sharing with individuals who hold similar values.
- Sense of wonder and awe.

A4 Special Interest Area

Standards and Guidelines

A. Recreation Facilities, Use Administration, and Trails

1. All management activities shall meet the prescribed Recreation Opportunity Spectrum (ROS) class criteria: (FSM 2311.1) as displayed in Table Four-28. **A4-001**

Table Four-28 Recreation Opportunity Spectrum Class per Special Interest Area

Special Interest Area	ROS Class
Barlow Tolgate	Rural (R)
Little Crater Lake Geologic Area	Roaded Natural (RN), Semi-Primitive, Non-Motorized (SPNM)
Olallie Lake Scenic Area	SPNM, Semi-Primitive Motorized (SPM)
Barlow Road (Historic Travel Route)	RN
Roaring River Scenic Area (including Mitchell Flats)	SPNM
Lost Lake	RN,R
Bagby Hot Springs	RN,SPNM
Sugar Pine Botanical Area	RN
Squaw Meadows	SPNM,RN
Parkdale Lava Beds Geologic Area	RN,SPNM
Cloud Cap-Tilly Jane Historic District	RN
Clackamas Lake Historic District	RN
Old Maids Flat Geologic Area	RN
Stringer Meadows	RN

2. Recreational facilities may occur. **A4-002**

3. Recreational use should be limited when dispersed use exceeds the capacity of the area. **A4-003**

4. Dispersed campsites shall be located to take advantage of topographic and vegetative screening, and shall be located outside of near-foreground view (i.e. 100 feet) from lakes, streams, trails, and key interest features. **A4-004** **A4-005**

5. Recreational livestock may be tied, grazed or held overnight or for extended periods of time within the foreground areas (i.e. 100 feet) of campsites, trails and key interest areas. **A4-006**

    a. Utilization of current year's vegetation growth should not exceed 30 percent (see Forestwide Range Management Standards and Guidelines). **A4-007**

   b. No more than 5 percent of an activity area should be in a detrimental soil condition from the combined impact of compaction, puddling and displacement (see Forestwide Soil Productivity Standards and Guidelines). **A4-008**

   c. Exposed mineral soil around campsites, trails and key interest areas should not exceed 25 percent of the activity area. **A4-009**

6. Industrial camping should not be allowed. **A4-010**

7. The trail system should disperse recreational use and provide a range of difficulty levels consistent with the prescribed ROS class. Trails should be maintained consistent with the prescribed ROS class. **A4-011** **A4-012**

8. Recreational livestock shall not be tied, grazed, or held overnight within developed recreation sites unless the site is especially designed and designated for livestock use. **A4-013**

B. Visual Resource Management

1. All management activities (except recreational facilities) within the Management Area shall meet visual quality objectives (VQO) of Retention in the foreground, and Partial Retention in the middleground and background distance zones, as seen from open roads, high recreational use areas, and water bodies within A4 boundaries. **A4-014**

2. See Forestwide Visual Resource Management Standards and Guidelines regarding prescribed VQOs from trails.

C. Cultural Resources Management

See Forestwide Cultural Resources Management Standards and Guidelines.

D. Wildlife and Fisheries

Wildlife and fisheries habitat improvement activities may occur. **A4-015**

E. Range

1. Existing commercial livestock grazing may be permitted (see Forestwide Range Management Standards and Guidelines for forage utilization). **A4-016**

2. Range improvements may occur and should be encouraged to protect otherresource values. **A4-017** **A4-018**

F. Vegetation Management

1. Regulated timber harvest shall be prohibited. **A4-019**

2. Nonregulated timber harvest activities necessary to achieve Special Interest Area objectives may be allowed, provided no permanent roads are constructed, and the prescribed ROS class is maintained. **A4-020**

3. Timber salvage may occur for the protection of special features and to provide for the **A4-021**
safety of visitors. Timber salvage activities to harvest windthrown timber, fire damaged **A4-022**
trees, insect or disease attacked trees, other similar natural tree mortality, or for the
protection of special features, or surrounding forest, may occur provided no permanent
roads are constructed.

4. Native plant collection should not be allowed in Botanical Special Interest Areas. **A4-023**

5. Native plant collection may be restricted in non-Botanical Special Interest Areas to protect high value botanic resources. **A4-024**

6. Introduction of non-native plants shall be prohibited in Botanical Special Interest Areas. **A4-025**

7. Firewood gathering may occur at designated sites. **A4-026**

G. Soil, Water, and Air Quality

See Forestwide Soil Productivity, Water, Riparian Area, Air Quality, and Forest Diversity Standards and Guidelines.

H. Minerals Management

1. Special Interest Areas shall be recommended for withdrawal from mineral entry under **A4-027**
the mining (1872 Mining Law) and mineral leasing laws. Provisions shall be made for **A4-028**
valid existing mining and leasing rights.

2. The development of common variety minerals (e.g. sand and gravel) shall not occur. **A4-029**

I. Geology

See Forestwide Geology Standards and Guidelines.

J. Lands and Special Uses

1. New recreation and nonrecreation special use permits may be permitted. **A4-030**

2. Special uses which do not meet Management Area management direction (i.e. nonconforming special uses) should be terminated or phased out. **A4-031**

3. Energy proposals and developments that are inconsistent with the Management Area **A4-032**
management direction should be recommended for denial. Energy development should **A4-033**
be discouraged.

4. Lands which are critical to the integrity of the Special Interest Area shall be retained or acquired. **A4-034**

K. Transportation Systems/Facilities; Travel and Access Management

1. Existing off-road vehicle tracks inconsistent with the prescribed ROS class shall be blocked, stabilized and returned to a natural condition. **A4-035**

2. New and existing roads, and associated facilities and structures may occur, and shall be consistent with Management Area management direction. New roads shall be prohibited within Stringer Meadows A4 Special Interest Area. **A4-036** **A4-037**

3. Recreational Off-road vehicle use shall be prohibited except as noted in items 4 and 5, below. **A4-038**

4. Off-road vehicle uses in powerline rights-of-way should be allowed where consistent with other management direction, e.g. riparian and cultural resources protection. **A4-039**

5. Over-snow vehicles on Skyline Road (Road 42) shall be allowed when at least 2 feet of snow cover is present and when it has been demonstrated that such use will not detract from the special features of the area. **A4-040**

6. Motorized boat use on lakes shall be prohibited. **A4-041**

7. Mountain bicycle use shall be accepted on designated roads and trails. Mountain bicycle use shall not be allowed on the Pacific Crest National Scenic Trail. **A4-042** **A4-043**

8. Pedestrian and equestrian use shall be encouraged. **A4-044**

L. Fire Prevention and Suppression

See Forestwide Forest Protection Standards and Guidelines.

M. Wood Residue Management

1. See Forestwide Soil Productiviy, Wildlife, and Forest Diversity Standards and Guidelines.

2. Prescribed burning may occur. **A4-045**

N. Integrated Pest Management

1. The suppression and prevention of pests shall be limited to outbreaks which threaten the recreational and special values of the area or adjacent resources. **A4-046**

2. See Forestwide Timber Management Standards and Guidelines regarding Integrated Pest Management.

A5 Unroaded Recreation

Eagle Creek Trailhead

Goal

Provide a variety of year-round unroaded recreation opportunities in a semi-primitive non-motorized setting and undeveloped forest environment.

Location

These management areas are located throughout the Forest and are generally accessed by trails suitable for foot or horseback use.

A5 Management Areas are mapped as part of the preferred alternative (see Alternative Q in the accompanying map packet). Other Management Areas representing Management Requirements, e.g. B7 General Riparian Area (unmapped) and B5 Pileated Woodpecker/Pine Marten Habitat Area (see Wildlife Resources map, supplement to Alternative Q, in the map packet), are inclusions within some A5 Management Area boundaries. B7 and B5 Management Area prescriptions, as well as the A5 prescription, apply to these corresponding inclusions.

Desired Future Condition

Major Characteristics

- Predominately natural or natural-appearing environment ranging in size from several hundred to thousands of acres.
- May show evidence of past human activity such as old stumps and road or railroad grades.
- Low interaction between recreational users, but with evidence of other users.

- Minimal on-site controls and restrictions present.
- No motorized vehicle use.
- No new roads, and existing roads are closed.
- Essentially unmodified environment managed for dispersed recreation such as hiking, camping, fishing, horseback riding, and cross-country skiing.
- Prescribed fire may occur.

Sensory Perceptions

- Independence and self-reliance.
- Tranquility.
- Closeness to nature.
- Feeling of isolation.
- High degree of interaction with the natural environment.

A5 Unroaded Recreation

Standards and Guidelines

A. Recreation Facilities, Use Administration, and Trails

1. All management activities shall meet the Semi-Primitive Non-Motorized (SPNM) Recreation Opportunity Spectrum (ROS) class (FSM 2311.1). **A5-001**

2. Dispersed campsites should be located to take advantage of topographic and vegetative screening, and should be located outside of foreground view (i.e. 100 feet) from lakes, streams, trails, and key interest features. **A5-002** **A5-003**

3. Recreational livestock may be tied, grazed, or held for extended periods in the foreground (i.e. 100 feet) of campsites, trailsand key interest areas. **A5-004**

    a. Utilization of current year's vegetation growth should not exceed 30 percent (see Forestwide Range Management Standards and Guidelines). **A5-005**

    b. No more than 5 percent of an activity area should be in a detrimental soil condition from the combined impact of compaction, puddling and displacement (see Forestwide Soil Productivity Standards and Guidelines). **A5-006**

    c. Exposed mineral soil around campsites, trails and key interest areas should not exceed 25 percent of the activity area. **A5-007**

4. Recreational livestock may enter riparian areas for water but shall not be present in riparian areas for extended periods of time (i.e. no grazing or overnight holding). **A5-008** **A5-009**

5. Industrial camping should not be allowed. **A5-010**

6. Measures to limit recreational use (e.g. reservations, fees, or permits) may be employed to maintain the SPNM ROS classification when dispersed recreation use exceeds capacity. **A5-011**

7. The trail system shall be developed and designed to disperse use, and provide a range of difficulty levels consistent with the Management Area management direction. **A5-012**

8. Trail construction, reconstruction and maintenance may occur consistent with the prescribed ROS class. **A5-013**

B. Visual Resource Management

1. All management activities within the Management Area shall meet the visual quality objective (VQO) of Retention in the foreground, middleground, and background distance as seen from trails, high recreational use areas, and water bodies within A5 boundaries. **A5-014**

2. See Forestwide Visual Resource Management Standards and Guidelines regarding VQOs from trails.

C. Cultural Resources Management

See Forestwide Cultural Resources Management Standards and Guidelines.

D. Wildlife and Fisheries

Wildlife and fisheries habitat improvement activities may occur. **A5-015**

E. Range Management

1. Existing commercial livestock grazing may be permitted (see Forestwide Range Standards and Guidelines regarding forage utilization). **A5-016**

2. Range improvements may occur. **A5-017**

F. Timber Management

1. Regulated timber harvest shall be prohibited. **A5-018**

2. Nonregulated timber harvest activities necessary to achieve recreation objectives may be allowed, provided no permanent roads are constructed, and the semi-primitive non-motorized ROS class is maintained. **A5-019**

3. Timber salvage activities (e.g. harvest windthrown timber, fire damaged trees, insect and disease attacked trees, or other similar natural tree mortality) for protection of the surrounding forest may be permitted, provided no permanent roads are constructed. **A5-020**

4. Firewood cutting may be permitted for on-site recreational use. Personal use firewood cutting should be allowed if cutting does not detract from the natural appearance of the area or conflict with other recreational uses. **A5-021** **A5-022**

G. Soil, Water and Air Quality

See Forestwide Soil Productivity, Water, Riparian Area and Air Quality Standards and Guidelines.

H. Minerals Management

1. See Forestwide Minerals Management Standards and Guidelines.

2. Development of common variety minerals (e.g. sand and gravel) shall not occur. **A5-023**

3. Minerals exploration may occur, and shall be performed in a manner that minimizes the effects on the semi-primitive non-motorized recreational setting. **A5-024** **A5-025**

4. Facilities and excavations developed during mineral exploration and/or development should be designed to be consistent with the semi-primitive non-motorized recreational setting, and shall be rehabilitated immediately following project completion. **A5-026** **A5-027**

5. Exploration should be timed and designed to avoid conflict with recreational activities, e.g. not on weekends during the summer season. **A5-028**

I. Geology

See Forestwide Geology Standards and Guidelines.

J. Lands and Special Uses

New recreation and nonrecreation special uses, permits, leases, rights-of-way and easements shall meet a semi-primitive non-motorized ROS class. Nonconforming special uses shall be terminated or phased out. **A5-029** **A5-030**

K. Transportation Systems/Facilities; Travel and Access Management

1. Existing roads shall be closed and/or obliterated within one year as prescribed in road management objectives. Some roads may be used for emergency adminsitrative use. **A5-031** **A5-032**

2. Existing off-road vehicle tracks, and other wheel tracks, shall be blocked, stabilized and returned to a natural condition. **A5-033**

3. Permanent roads and associated facilities, and structures inconsistent with the semi-primitive non-motorized ROS class shall not be permitted. **A5-034**

4. Permanent administrative facilities should not occur. Permanent helispots may occur only when authorized by the Forest Supervisor. **A5-035** **A5-036**

5. Motorized vehicle use shall be prohibited, except in emergency situations (e.g. fire suppression and search and rescue) and timber salvage activities. **A5-037**

6. Nonmotorized modes of travel, including mountain bicycles, shall be permitted. **A5-038**

L. Fire Prevention and Suppression

See Forestwide Forest Protection Standards and Guidelines.

M. Wood Residue Management

1. See Forestwide Soil Productivity, Wildlife, and Forest Diversity Standards and Guidelines.

2. Prescribed burning should be considered when semi-primitive non-motorized ROS objectives can be met. **A5-039**

N. Integrated Pest Management

1. **The suppression and prevention of pests shall be limited to outbreaks which threaten the recreation, wildlife, fish, or timber values of the area or adjacent resources. Biological control measures should be emphasized.** **A5-040** **A5-041**

2. **See Forestwide Timber Management Standards and Guidelines regarding Integrated Pest Management.**

A6 Semi-Primitive Roaded Recreation

Goal

Provide a variety of year-round dispersed motorized opportunities and opportunities for semi-primitive recreational experiences.

Location

These Management Areas are located throughout the Forest, often in steep rugged sub-alpine terrain. They are accessed by primitive roads and trails, often providing outstanding views of mountains, meadows, and rockscapes.

A6 Management Areas are mapped as part of the preferred alternative (see Alternative Q in the accompanying map packet). Other Management Areas representing Management Requirements, e.g. B7 General Riparian Area (unmapped) and B5 Pileated Woodpecker/Pine Marten Habitat Area (see Wildlife Resource map, supplement to Alternative Q, in the map packet), are inclusions within some A6 Management Area boundaries. B7 and B5 prescriptions apply to these inclusions; plus, the A6 prescription's prohibition of regulated timber harvest also applies.

Desired Future Condition

Major Characteristics

- Predominately natural-appearing environment ranging in size from several hundred to thousands of acres.
- Concentration of users is low with some evidence of other users.
- Motorized use opportunities are available.
- Minimum on-site controls and restrictions.
- Mountainous trails and primitive roads.

Sensory Perceptions

- Users will occasionally see and hear motorized use such as 4-wheel drive vehicles and motorcycles.
- Sense of isolation and independence.
- High degree of interaction with the natural environment.
- Users may use motorized vehicles to achieve sense of challenge and risk.

A6 Semi-Primitive Roaded Recreation

A. Recreation Facilities, Use Administration, and Trails

1. All management activities shall meet the Semi-Primitive Motorized Recreation Opportunity Spectrum (ROS) class (FSM 2311.1). **A6-001**

2. Measures to limit recreational use (e.g. reservations, fees, or permits) may be employed to maintain the semi-primitive motorized ROS class. **A6-002**

3. Dispersed campsites should be located to take advantage of topographic and vegetative screening and should be placed outside of foreground view (i.e. 100 feet) from lakes, streams, trails, and key interest features. **A6-003** **A6-004**

4. Recreational livestock may be tied, grazed, or held for extended periods in the foreground areas (i.e. 100 ft.) of campsites, trails andkey interest areas. **A6-005**

    a. Utilization of current year's vegetation growth should not exceed 30 percent (see Forestwide Range Management Standards and Guidelines). **A6-006**

    b. No more than 5 percent of an activity area should be in a detrimental soil condition from the combined impact of compaction, puddling and displacement (see Forestwide Soil Productivity Standards and Guidelines). **A6-007**

    c. Exposed mineral soil around campsites, trails and key interest areas should not exceed 25 percent of the activity area. **A6-008**

5. Recreational livestock may enter riparian areas for water but shall not be present in riparian areas for extended periods of time (i.e. no grazing or overnight holding). **A6-009** **A6-010**

6. Industrial camping should not be allowed. **A6-011**

7. The trail system should be developed and designed to disperse use, and provide a range of difficulty levels consistent with Management Area management direction. **A6-012**

8. Trail construction, reconstruction and maintenance shall be consistent with the prescribed ROS class. **A6-013**

9. Developed recreation facilities may occur. **A6-014**

10. Trail construction/reconstruction may occur. **A6-015**

B. Visual Resource Management

1. All management activities within the Management Area shall meet the visual quality objective (VQO) of Retention in the foreground, middleground, and background areas as seen from open roads, trails, high recreational use areas, and water bodies within A6 boundaries. **A6-016**

2. See Forestwide Visual Resource Management Standards and Guidelines regarding trail VQOs.

C. Cultural Resources Management

See Forestwide Cultural Resource Management Standards and Guidelines.

D. Wildlife and Fisheries

Wildlife and fisheries habitat improvement activities may occur. **A6-017**

E. Range Management

1. Existing commercial livestock grazing may be permitted (see Forestwide Range Management Standards and Guidelines). **A6-018**

2. Range improvements may occur. **A6-019**

F. Timber Management

1. Regulated timber harvest shall be prohibited. **A6-020**

2. Timber salvage activities (e.g. harvest windthrown timber, fire damaged trees, insect and disease attacked trees, hazard trees, or other similar natural tree mortality) for protection of the surrounding forest or visitor safety may be permitted. **A6-021**

3. Nonregulated timber harvest operations necessary to achieve recreation objectives may be allowed. **A6-022**

4. Firewood cutting may be permitted for on-site recreation use. Personal use firewood cutting should be allowed under permit if cutting does not detract from the natural appearance of the area or conflict with other recreational uses. **A6-023** **A6-024**

G. Soil, Water, and Air Quality

See Forestwide Soil Productivity, Water, Riparian Area and Air Quality Standards and Guidelines.

H. Minerals Management

1. See Forestwide Minerals Management Standards and Guidelines.
2. Development of common variety minerals should not occur. A6-025
3. Minerals exploration and development should be performed during seasons designated to reduce conflict with high recreation activity, e.g. summer weekends and holidays. A6-026
4. Facilities and excavations developed during mineral exploration and/or development should be designed to be consistent with the semi-primitive motorized recreation setting, and shall be rehabilitated immediately following project completion. A6-027

I. Geology

See Forestwide Geology Standards and Guidelines.

J. Lands and Special Uses

1. Recreation and nonrecreation special uses may be permitted. A6-028
2. Special uses not consistent with Management Area management direction (i.e. nonconforming) shall be terminated. A6-029

K. Transportation Systems/Facilities; Travel and Access Management

1. Road management objectives shall be based on recreation objectives and ROS class. A6-030
2. New roads, associated facilities, and structures may occur to meet recreation objectives. A6-031
3. Roads, associated facilities and structures inconsistent with the semi-primitive motorized ROS setting shall not be permitted, except as provided by the 1872 Mining Laws and mineral leasing laws. A6-032
4. Pedestrian, equestrian, and mountain bicycle use shall be encouraged. Recreational off-road vehicle use shall be permitted only on designated trails. A6-033 A6-034
5. The area north of Wahtum Lake shall be closed to recreational off-road vehicle use. A6-035

L. Fire Prevention and Suppression

See Forestwide Forest Production Standards and Guidelines.

M. Wood Residue Management

1. See Forestwide Soil Productivity, Wildlife, and Forest Diversity Standards and Guidelines.

2. Prescribed fire may occur. **A6-036**

N. Integrated Pest Management

1. The suppression and prevention of pests shall be limited to outbreaks which threaten the recreation, wildlife, fish, or timber values of the area or adjacent resources. **A6-037**

2. See Forestwide Timber Management Standard and Guidelines regarding Integrated Pest Management.

Diffuse stickweed.

A7 Special Old Growth

Goal

Provide the many significant values of old growth forests for present and future generations. Maintain old growth to provide for wildlife and plant habitat, ecosystem diversity, preservation of aesthetic qualities, and to provide opportunities for a high degree of interaction between people and forests with old growth character.

Location

These Management Areas are scattered throughout the forest. Identified sites contain "classic" old growth stand characteristics. Sites do not attempt to encompass an entire ecosystem with old growth character, but instead, selected portions with easy access by Forest visitors.

A7 Management Areas are mapped as part of the preferred alternative (see Alternative Q in the accompanying map packet). Other Management Areas representing Management Requirements, e.g. B7 General Riparian Area (unmapped) and B5 Pileated Woodpecker/Pine Marten Habitat Area (see Wildlife Resources map, supplement to Alternative Q, in the map packet), are inclusions within or overlap some A7 Management Area boundaries. B7 and B5 Management Area prescriptions, as well as, the A7 prescription, apply to these corresponding inclusions.

Desired Future Condition

Major Characteristics

- Evidence of human activities may be present, but will be subordinate to the other characteristics of the site.
- Opportunities for a high degree of interaction with the natural environment.
- Stands provide for interpretive opportunities.
- Climax vegetation dominates. The tree canopy is multi-layered, with canopy gaps and understory patchiness.
- Dead standing and fallen tree material is very much evident.
- A variety of stand sizes ranging from several acres to several hundred acres.
- Accessible to Forest visitors via roads and trails.

Sensory Perceptions

- Sense of a rare environmental condition.
- Closeness to nature.
- Tranquility; a still quietness.
- Feeling of being in a stable environment.
- Awe-inspiring like a huge cathedral.

- The scent of richness and of pure air.
- The sounds of a high variety of bird life.
- A feeling of subordination to the natural environment.
- Sense of walking on a thick organic carpet.

A7 Special Old Growth

A. Recreation Facilities, Use Administration, and Trails

All management activities shall meet the prescribed Recreation Opportunity Spectrom (ROS) class criteria (FSM AF-FSM 2311.1) as displayed in Table Four-29. **A7-001**

Table Four-29 Recreation Opportunity Sectrum Class Per Special Old Growth Area

Location	ROS Class	Ranger District
Amey's Grove	RN	Bear Springs
Bagby Area and Trail	SPNM	Estacada
Big White Pines	RN	Bear Springs
Blister Creek	RN	Estacada
Blue Box OG	RN	Bear Springs
Clackamas Lake Cathedral	RN	Bear Springs
Clackamas River Trail	RN	Estacada
Little Crater OG by PCNST	RN	Bear Springs
Fish Creek/Wash Creek	RN	Estacada
Hickeyville Ecological Area	RN	Bear Springs
Hot Springs Fork	RN	Estacada
Iron Creek OG	RN	Bear Springs
Jigsaw OG/Elk	RN	Bear Springs
Lake Branch	RN	Hood River
Lost Lake	RN	Hood River
Lower Triangle OG	RN	Bear Springs
McCubbins Pines	RN	Bear Springs
Mill Creek	RN	Hood River
Oak Grove Fork OG	RN	Bear Springs
OG Yew	RN	Bear Springs
Old Skyline OG	RN	Bear Springs
Pathfinder OG Pine/DF	RN	Bear Springs
PCNST & Timothy Lake Trail	RN	Bear Springs
Pioneer Big Trees	RN	Bear Springs
Wards Meadow/Sandstone	SPNM	Estacada

1. Interpretive trails and facilities should be encouraged. **A7-002**

2. Structures, improvements, and trails may occur consistent with the prescribed ROS class. **A7-003**

3. Industrial camping should not be allowed. **A7-004**

4. Day recreational use should be encouraged; overnight camping and recreational livestock use should not be encouraged. A7-005 A7-006

B. Visual Resource Management

All management activities within the Management Area shall meet the visual quality objective (VQO) of Retention, as seen from trails, high recreational use areas, and water bodies within A7 boundaries. A7-007

C. Cultural Resources Management

See Forestwide Cultural Resources Management Standards Guidelines.

D. Wildlife and Fisheries

1. Habitat improvement activities for old growth associated species shall be encouraged. A7-008
2. Fisheries habitat improvement activities may occur. A7-009

E. Range Management

1. Existing commercial livestock grazing may occur. See Forestwide Range Management Standards and Guidelines regarding forage utilization. A7-010
2. Commercial livestock handling facilities (e.g. corrals and loading chutes) should not be permitted. A7-011
3. Fencing should not occur. Fencing should only be used to protect or enhance old growth forest associated resource values. A7-012 A7-013

F. Timber Management

1. Regulated timber harvest shall be prohibited. A7-014
2. Timber salvage activities shall not be allowed, except for removal and/or sale of hazard trees. A7-015
3. Firewood cutting shall not be allowed except for on-site recreational use. A7-016
4. Vegetation management may be permitted. A7-017

G. Soil, Water, and Air Quality

See Forestwide Soil Productivity, Water, Riparian Area, and Air Quality Standards and Guidelines.

H. Minerals Management

1. See Forestwide Minerals Management Standards and Guidelines.
2. Development of common variety minerals (e.g. sand and gravel) shall not be permitted. A7-018

I. Geology

See Forestwide Geology Standards and Guidelines.

J. Lands and Special Uses

1. Recreation and non-recreation special uses, permits, leases, rights-of-way, and easements should be discouraged. A7-019 Existing special uses not consistent with Management Area management direction should be terminated or phased out. A7-020
2. Commercial developments shall not be permitted. A7-021

K. Transportation Systems/Facilities; Travel and Access Management

1. Roads and trails consistent with the prescribed ROS class may be constructed and maintained to provide access. A7-022
2. Road management objectives shall be based on Management Area management direction. A7-023
3. Recreational off-road vehicle use should be prohibited. A7-024
4. Foot travel should be encouraged. A7-025
5. All modes of cross-country travel should be discouraged. A7-026

L. Fire Prevention and Suppression

See Forestwide Forest Protection Standards and Guidelines.

M. Wood Residue Management

1. Removal of coarse woody debris (i.e. snags and down logs) should not occur. See Forestwide Soil Productivity, Wildlife and Forest Diversity Standards and Guidelines. A7-027
2. Prescribed burning may occur to achieve old growth forest associated values. A7-028

N. **Integrated Pest Management**

The suppression and prevention of pests shall be limited to outbreaks which threaten the recreation, wildlife, fish, or silvicultural values of the area or adjacent resources. See Forestwide Timber Management Standards and Guidelines regarding Integrated Pest Management. **A7-029**

A8 Northern Spotted Owl Habitat Area

Goal

Protect and manage old growth and mature forest habitat to maintain a viable population of northern spotted owls well distrubuted across the Forest.

Location

These Management Areas are dispersed throughout the Forest, generally below 4,000 feet. The Final Supplemental Environmental Impact Statement to the Pacific Northwest Regional Guide (December 1988) defines the Management Area size, distribution, and stand characteristics requirements.

A8 Management Areas are mapped as part of the preferred alternative (see Alternative Q in the accompanying map packet). Some A8 Management Areas are inclusions within A2 Wilderness and are delineated on the Alternative Q map with dashed boundaries. These inclusions are subsets of A2 and both A2 and A8 prescriptions apply; the A2 prescription predominates.

Non-wilderness A8 Management Areas function as "overlays" to other Management Areas; A8 prescriptions predominate, however, some occasions exist where the overlayed Management Area prescriptions are more restrictive to vegetation management or public access. In these occasions the more restrictive prescription applies. For example, the A8 prescription allows for off-road vehicle (ORV) use on designated trails outside of the spotted owl reproductive season, but the B6 Special Emphasis Watershed prescription for The Dalles Watershed and Still Creek drainage prohibits ORV use; therefore, the B6 prescription regarding ORV use predominates within A8 Management Areas within The Dalles Watershed and Still Creek drainage.

Other Management Areas, representing Management Requirements, e.g. B7 General Riparian Area (unmapped) and B5 Pileated Woodpecker/Pine Marten Habitat Area (see Wildlife Resources map, supplement to Alternative Q in the map packet) are inclusions within A8 Management Area boundaries. A8 prescriptions predominate.

See DA3 and DA8 prescriptions regarding overlap between Northern Spotted Owl Habitat Areas and Research Natural Areas within the Bull Run Watershed Management Unit.

Desired Future Condition

Major Characteristics

- Large, mostly contiguous tracts of at least 1,500 acres of old growth/mature forest, much of it in a pristine state.
- Evidence of human activities may be present, but are subordinate to the other characteristics of the stand.
- Opportunity for a high degree of interaction with the natural environment and wildlife.

- Climax vegetation is prevalent.
- Abundant snags in a variety of sizes and decay stages are present.
- A variety of tree sizes exist; large trees are abundant.
- Multiple canopy layers are evident.

Sensory Perceptions

- Closeness and oneness with nature.
- Tranquility, quiet, at peace.
- Feeling of awe, like in a huge cathedral.
- Scents of richness, pure air.
- Sounds of bird life, woodpeckers.
- Plants and ground wet to the touch.
- Ground soft to the touch and to walk on.

A8 Northern Spotted Owl Habitat Area

A. Dispersed and Developed Recreation

1. Dispersed recreation use should be discouraged. **A8-001**

2. New dispersed sites and developed recreation facilities should not be developed. **A8-002**
   Recreational use of existing dispersed recreation sites may occur. **A8-003**

3. Recreational off-road vehicle use shall be permitted only on designated trails. **A8-004**
   Recreational off-road vehicle use shall be prohibited between March 1 and September 30. **A8-005**

4. New trails should be discouraged. **A8-006**
   Existing trails and other facilities should be maintained to minimize impacts to old growth and mature forest habitat. **A8-007**

5. Trail maintenance may occur. **A8-008**
   Use of explosives and prolonged activities associated with trail maintenance should not occur during the spotted owl reproduction period, i.e. March 1 through September 30. **A8-009**

B. Visual Resource Management

1. Management activities within the Management Area shall achieve a visual quality objective (VQO) of Partial Retention from open roads within A8 boundaries. **A8-010**
   Exceptions may occur within "designated viewsheds" (see Forestwide Visual Resource Management Standards and Guidelines regarding designated viewshed VQOs). **A8-011**

2. See Forestwide Visual Resource Management Standards and Guidelines for VQOs prescribed for trails.

C. Cultural Resources Management

See Forestwide Cultural Resources Management Standards and Guidelines.

D. Wildlife and Fisheries

1. Habitat improvement activities for old growth associated species should be encouraged. **A8-012**

2. Wildlife and fisheries habitat improvement activities may occur **A8-013**
   and shall be consistent with Management Area management direction. **A8-014**

3. Use of explosives or other prolonged disturbing activities should not occur between March 1 and September 30. **A8-015**

E. Range Management

1. Existing commercial livestock grazing may occur and shall be consistent with maintaining old growth habitat/ecosystems. Livestock grazing shall occur only in approved grazing allotments. A8-016 A8-017

2. Livestock holding facilities (e.g. corrals and loading ramps) shall not be permitted. Fencing may occur to protect or enhance old growth habitat values. A8-018 A8-019

3. Livestock salt blocks and watering troughs should not be permitted. A8-020

F. Timber Management

1. Regulated timber harvest shall be prohibited. A8-021

2. Timber salvage activities shall not be permitted. Removal of down trees that are hazards to road prisms or road access shall be permitted within cleared road rights-of-way. A8-022 A8-023

3. Firewood cutting should not be permitted. A8-024

4. Uneven-age management principles or other silvicultural techniques may be employed to enhance habitat characteristics for northern spotted owl. Application of these activities should not occur between March 1 and September 30. A8-025 A8-026

G. Soil, Water and Air Quality

See Forestwide Soil Productivity, Water, Riparian Area, and Air Quality Standards and Guidelines.

H. Minerals

1. See Forestwide Minerals Management Standards and Guidelines.
2. Common variety mineral (e.g. sand and gravel) development activities shall not be conducted within active spotted owl habitat nesting areas between March 1 and September 30. A8-027

3. Existing rock quarries within A8 boundaries shall not be expanded, and should be phased out. A8-028 A8-029

4. Mineral exploration activities shall be discouraged and should not occur within active spotted owl nesting areas between March 1 and September 30. A8-030 A8-031

I. Geology

See Forestwide Geology Standards and Guidelines.

J. Lands and Special Uses

1. Lands within A8 shall be retained. See Forestwide Lands Program Standards and Guidelines regarding land exchanges. **A8-032**

2. New utility rights-of-way should not be permitted. **A8-033**

3. Recreation and non-recreation special uses, permits, leases, rights-of-way, and easements should not occur. Existing special uses not consistent with Management Area management direction should be terminated. **A8-034** **A8-035**

K. Transportation Systems/Facilities; Travel and Access Management

1. Roads open to vehicle access shall not exceed a density of 2.0 miles per square mile. Additional access restrictions should be applied if necessary to minimize impacts to spotted owl reproduction, e.g. roads or trails near active nesting areas. **A8-036** **A8-037**

2. Off-road vehicle use shall be permitted only on designated trails. Off-road vehicle activities shall be prohibited between March 1 and September 30. **A8-038** **A8-039**

3. Non-motorized modes of travel may occur on designated trails. All modes of off-trail travel shall be discouraged. **A8-040** **A8-041**

L. Fire Prevention and Suppression

1. See Forestwide Forest Protection Standards and Guidelines.

2. See Forestwide Forest Protection, Initial Attack Standards and Guidelines (item D.4) regarding Resource Advisors.

M. Wood Residue Management

1. Removal of coarse woody debris (i.e. snags and down logs) should not occur. See Forestwide Soil Productivity, Wildlife and Forest Diversity Standards and Guidelines. **A8-042**

2. Prescribed burning may occur to achieve spotted owl habitat objectives. Prescribed burning should be minimized in the vicinity of active spotted owl nest sites between March 1 and September 30. **A8-043** **A8-044**

3. Wildlife trees shall be maintained to provide habitat sufficient to support at least 90 percent of the maximum biological potential of primary cavity dependent species, e.g. woodpeckers. **A8-045**

N. Integrated Pest Management

1. Herbicides should not be permitted outside of road rights-of-way. **A8-046**

2. If insect epidemics threaten spotted owl habitat quality, biological control measures should be considered. **A8-047**

A9 Key Site Riparian Area

Bull Run Reservoir

Goal

Maintain or enhance habitat and hydrologic conditions of selected riparian areas, notable for their exceptional diversity, high natural quality and key role in providing for the continued production of riparian dependent resource values.

Location

Relatively large (greater than 20 acres) areas exhibiting high habitat diversity and outstanding capabilities for producing high quality water, generally associated with streams, lakes, and wetlands. The designation includes riparian and aquatic ecosystems and the upland transition (influence) zones of varying widths. Actual on-ground boundaries are located and adjusted during project implementation planning and analysis.

A9 Management Areas are mapped as part of the preferred alternative (see Alternative Q in the accompanying map packet). Some A9 Management Areas are inclusions within A2 Wilderness and are delineated on the Alternative Q map with dashed boundaries. These inclusions are subsets of A2 and both A2 and A9 prescriptions apply; the A2 prescription predominates.

Other Management Areas representing Management Requirements, e.g. B7 General Riparian Area (unmapped) and B5 Pileated Woodpecker/Pine Marten Habitat Area (see Wildlife Resources map, supplement to Alternative Q, in the map packet) are inclusions within or overlap A9 Management Area boundaries. A9 prescriptions predominate.

Desired Future Condition

Major Characteristics and Physical Features

- Provides consistently excellent water quality (e.g. clarity, temperature and chemistry).
- Excellent fish spawning and rearing habitat, high quality waterfowl breeding, nesting and resting habitat, wildlife cover, and diverse plant communities.
- Populations of riparian dependent species are in harmony with capacity of habitat.
- Habitat conditions are relatively stable and resilient.
- Soil, water, fish, and wildlife management activities predominate.
- Evidence of human activities may be present, but is subordinate to riparian characteristics.
- Slopes are typically gentle to moderate and nearly flat to somewhat dissected adjacent to stream channels.
- Amount of sediment in streams is well within the range and frequency adapted to by native aquatic species.
- Summer stream temperatures are well-moderated with limited day to night variation; generally cool summer water temperatures are well within the tolerances of aquatic organisms indigenous to the systems.
- Channels are maintained at or restored to inherent (historic) conditions.
- For Class I, II, and III steams, relatively large pools, persistent during lowest flows, are frequent and well-distributed.
- Frequent and well distributed concentrations of large wood (long and large diameter) within stream channels.
- Riparian areas are typically fully occupied by native plant community types.
- Dynamic, multi-age communities promote floodplain, bank, and channel stability, provide resiliency to disturbance, and promote aquatic diversity.
- Riparian areas adjacent to streams retain and store water during floods and help maintain summer flows.
- Riparian areas store large woody debris and trap sediment.
- Multi-layered canopy including large tall green trees, snags, intermediate size trees, and understory vegetation.
- Frequent small openings in the canopy favor a variety of species and successional stages.
- Fallen, decayed trees and accumulation of litter and large organic material on the surface of the ground.

- Disturbance (e.g. wild fires, windthrown trees, and channel scouring) is localized and generally infrequent.

Sensory Perceptions

- General feeling of "closeness" to nature.
- Sounds of flowing water, birds and wildlife predominate.
- Sights, sounds, and smells related to human activities are absent or subordinate.
- Lighting is variable ranging from bright openings to relatively dark, shaded areas beneath dense vegetative canopies.
- During summer, cooler and more humid than surrounding upslope areas.
- Presence or evidence of a large variety of wildlife, plants and animals.

A9 Key Site Riparian

A. Dispersed and Developed Recreation

1. Development of new, or expansion of existing dispersed and developed recreation sites, facilities, and trails (hiking and cross country skiing) should not be permitted. Interpretive sites and trails may be allowed if riparian related values are not jeopardized. **A9-001** **A9-002**

2. Existing developed and dispersed recreation sites, facilities, and trails not consistent with protection of riparian values, shall be modified, rehabilitated, or removed. Recreation facilities may occur within the higher drier "transition zone" between the immediate riparian and upslope mesic plant communities. **A9-003** **A9-004**

3. Recreational livestock may enter riparian areas for water, but shall not be held for extended periods of time, e.g. grazing or overnight holding. **A9-005** **A9-006**

B. Visual Resource Management

1. Management activities within the Management Area shall achieve a visual quality objective (VQO) of Partial Retention from open roads, streams and water bodies within A9 boundaries. **A9-007** Higher VQOs may occur within "designated viewsheds" (see Forestwide Visual Resource Management Standards and Guidelines regarding designated viewshed VQOs). **A9-008**

2. See Forestwide Visual Resource Management Standards and Guidelines for VQOs prescribed from trails.

C. Cultural Resources Management

1. See Forestwide Cultural Resources Managment Standards and Guidelines.

2. Authorized excavation of cultural resource sites may occur and should minimize impacts on riparian resource values. Sites rehabilitation shall be promptly performed. **A9-009** **A9-010** **A9-011**

D. Wildlife and Fisheries

1. Wildlife and fisheries rehabilitation and enhancement projects should be encouraged, with emphasis on improvement of key and/or sensitive wildlife and fish habitat. **A9-012**

2. Native plant species should be used in vegetation management (e.g. establishment and revegetation) projects. **A9-013**

3. Wildlife trees and snags shall be maintained to provide for at least 90 percent of the maximum biological potential for primary cavity nesting species, e.g. woodpeckers. **A9-014**

E. Range Management

1. Existing commercial livestock grazing may occur but should be discouraged. Forage utilization of current year's vegetation growth should not exceed 30 percent (see Forestwide Range Management Standards and Guidelines regarding forage utilization). **A9-015 A9-016**

2. Livestock holding facilities (e.g. corrals and loading chutes) should not be permitted. Where livestock grazing occurs, fencing should be encouraged to protect, rehabilitate or enhance riparian related values, e.g. exclude livestock from a sensitive plant population. **A9-017 A9-018**

3. Livestock salt blocks and watering troughs should not be permitted. **A9-019**

F. Vegetation Management

1. Regulated timber harvest shall be prohibited. **A9-020**

2. Silvicultural techniques, including timber harvest, may occur only to maintain or enhance riparian resource values. **A9-021**

3. Timber salvage activities shall not occur, except to protect or enhance riparian resource values. Removal of down trees that are hazards to road prisms or road access shall be permitted within cleared road rights-of-way. **A9-022 A9-023**

4. Firewood cutting should not be allowed. On site, recreation oriented, firewood gathering may occur. **A9-024 A9-025**

5. Vegetation manipulation activities to maintain open meadows should be encouraged, e.g. prescribed fire. **A9-026**

G. Soil, Water and Air Quality

See Forestwide Soil Productivity, Water, Riparian Area and Air Quality Standards and Guidelines.

H. Minerals Management

1. Locatable and leaseable minerals exploration and/or development activities shall be designed to minimize impacts to riparian resource values. See Forestwide Minerals Management Standards and Guidelines. **A9-027**

2. Common variety minerals (e.g. sand and gravel) development activities shall be prohibited. **A9-028**

I. Geology

See Forestwide Geology Standards and Guidelines.

J. Lands and Special Uses

1. Rights-of-way and easements should not be permitted. **A9-029**

2. Maintenance of existing ditches or other water transmission structures may be permitted. **A9-030**

3. Recreation and non-recreation special use permits should be discouraged. **A9-031** Existing special uses not consistent with Management Area management direction should be terminated. **A9-032**

K. Transportation Systems/Facilities; Travel and Access Management

1. Construction of new roads should not occur. **A9-033** Existing local roads shall be considered for closure and obliteration. **A9-034**

2. Existing road crossings of fish-bearing streams shall be designed to provide for adult and juvenile fish passage (Oregon Revised Statute 509.605). **A9-035**

3. Administrative access roads for maintenance of existing special use facilities (e.g. water transmission ditches, etc.) may be permitted. **A9-036**

4. Water drainage systems for roads should incorporate practical features to minimize or eliminate discharge of sediment or other pollutants into water bodies (i.e. streams, lakes, ponds, or wetlands). **A9-037**

5. Recreational off-road vehicle use, except over-snow vehicles, shall be prohibited. **A9-038** Over-snow vehicle use shall be consistent with protection of riparian values, e.g. such use may only occur over at least 2 feet of snow. **A9-039**

6. Equestrian and mountain bicycle use should occur only on designated trails. **A9-040**

L. Fire Prevention and Suppression

1. See Forestwide Forest Protection Standards and Guidelines.

2. Heavy equipment (e.g. tractors) should not be used for fire suppression. **A9-041**

3. Application of chemical fire retardants should be minimized. **A9-042**

M. Wood Residue Management

Prescribed burning should be considered for the purpose of enhancing riparian resource values. **A9-043**

N. Integrated Pest Management

1. Suppression and prevention of pests shall be limited to outbreaks which threaten riparian resource values. Biological control measures should be emphasized. **A9-044 A9-045**

2. See Forestwide Timber Management Standards and Guidelines regarding Integrated Pest Management.

A10 Developed Recreation Sites

Goal

Provide a range of high quality outdoor recreational opportunities for concentrated recreational use at readily accessible, appropriately designed developed sites.

Location

These Management Areas are scattered across the Forest, ranging in size from less than one acre to hundreds of acres. Included in this Management Area are campgrounds, picnic grounds, boating sites, swimming areas, marinas, observation sites, privately owned improvements such as resorts, recreation residences (i.e. summer homes), organization sites, trailheads and snowparks.

A10 Management Areas are generally not mapped; the one exception is the Summer Home tracts (i.e. recreational residences) near the town of Rhododendron on Highway 26. All other A10 Management Areas are inclusions within or between other Management Areas. These inclusions may occur within all Management Areas except A2, A3, A8 and the D-series Management Areas in the Bull Run Watershed Management Unit.

A10 Management Areas, although typically quite small, are discrete entities and the A10 prescription is applied.

Desired Future Condition

Major Characteristics

- Ranges from a natural to an urbanized environment, although the background may have natural-appearing elements.
- Primary attribute is a physical facility associated with recreational activities.
- Vegetative management will be often evident.
- Accessed by Forest roads suitable for passenger cars.
- Outstanding views of majestic mountains, cold, clear streams, lakes and waterfalls are common.

Sensory Perceptions

- Sights, sounds, and smells associated with human activity will normally be present.
- Moderate to large numbers of users may be present.

A10 Developed Recreation

A. Dispersed Recreation

1. Dispersed recreation opportunities that are complimentary to the developed sites shall be permitted. See Forestwide Dispersed Recreation Standards and Guidelines. **A10-001**

2. Dispersed camping may occur within developed campgrounds outside of normal operating seasons. **A10-002**

B. Developed Recreation

1. All developed sites shall have an approved site plan (FSM 2333) for construction, reconstruction and maintenance. **A10-003**

2. Occupancy and use of developed sites shall be regulated to the extent necessary to protect resources and facilities and to insure the safety and enjoyment of recreating Forest visitors. **A10-004**

3. All motorized recreational vehicles, except over-snow vehicles, shall be limited to access roads and parking areas. **A10-005**

4. Recreational livestock shall not be tied, grazed, or held overnight within developed sites unless the site is especially designed and designated for livestock use, e.g. Joe Graham Horse Camp within Clackamas Lake Historic District (A4 Special Interest Area-Historic). **A10-006**

5. Development (including new construction, reconstruction, or relocation of improvements), administration, occupancy, and use of sites under special use permits shall conform to Management Area management direction (i.e. as detailed in site specific master plans). **A10-007**

6. Site specific Management Area boundaries shall be determined during project implementation planning and analysis. **A10-008**

C. Visual Resource Management

1. Management activities within the Management Area shall achieve a visual quality objective (VQO) of Partial Retention as viewed from within A10 boundaries. **A10-009**

2. When A10 Management Areas fall within "designated viewsheds" (see Forestwide Visual Resource Management Standards and Guidelines, item A.2) a VQO of Partial Retention shall be achieved within the A10 Management Area as viewed from the identified designated viewshedviewer position. **A10-010**

   Note: A10 sites are often identified as viewer positions for designated viewsheds, therefore prescribing VQOs beyond the A10 boundaries.

D. Cultural Resources Management

See Forestwide Cultural Resources Management Standards and Guidelines.

E. Wildlife and Fisheries

1. Wildlife and fisheries habitat improvement activities should be allowed when consistent with Management Area management direction. **A10-011**

2. Recreational use of A10 Management Areas located within deer and elk winter range (Map Four-4) should be restricted between December 1 and April 1. **A10-012**

F. Range Management

Commercial livestock may be excluded from some developed recreation sites (e.g. campgrounds), and shall be excluded in "fee campgrounds". **A10-013**

G. Soil, Water and Air Quality

1. See Forestwide Soil Productivity, Water, Riparian Area and Air Quality Standards and Guidelines.

2. Watershed rehabilitation and enhancement activities shall be encouraged. **A10-014**

H. Vegetation Management

1. Regulated timber harvest shall be prohibited. **A10-015**

2. Timber salvage activities may be allowed to meet recreation objectives, protect resources or facilities, or to insure the safety and enjoyment of Forest visitors. **A10-016**

3. Vegetation management shall compliment the development and recreational experience level planned for the site, and shall be consistent with the Northwest Region (R6 "Managing Competing and Unwanted Vegetation" FEIS, Vegetation Management Environment Impact Record of Decision (1988) and Mediated Agreement (1989). **A10-017** **A10-018**

I. Minerals Management

1. Common variety minerals (e.g. sand and gravel) should not be developed. **A10-019**

2. Developed recreation sites shall be recommended for withdrawal from mineral entry under the mining (1872 Mining Law) and mineral leasing laws. Provision shall be made for valid existing mining and leasing rights. **A10-020** **A10-021**

J. Geology

See Forestwide Geology Standards and Guidelines.

K. Lands and Special Uses

See Forestwide Lands Program and Special Uses Standards and Guidelines.

L. Transportation Systems/Facilities; Travel and Access Management

1. Roads, associated facilities, and road signing shall conform to the development and recreational experience level planned for the site within required safety regulations. **A10-022**

2. Motorized vehicles, except over-snow vehicles, shall be restricted to access roads and parking areas. **A10-023**

3. Nonmotorized modes of travel, including bicycles, shall be encouraged. **A10-024**

M. Fire Prevention and Suppression

1. See Forestwide Forest Protection Standards and Guidelines.

2. Prevention actions should compliment the development and experience level planned for the site. **A10-025**

3. Rehabilitation and revegetation work following a fire should compliment the development and experience level planned for the site. **A10-026**

N. Wood Residue Treatment

1. Management of down woody material should compliment the development and experience level planned for the site. See Forestwide Wildlife Standards and Guidelines regarding snags and down logs. **A10-027**

2. Firewood cutting for off-site personal use shall not be permitted. **A10-028**

3. Pile burning may occur consistent with Management Area management direction. **A10-029**

O. Integrated Pest Management

1. Biological methods of control shall be preferred for insect control. Suppression and prevention actions should compliment the development and experience level planned for the site. **A10-030** **A10-031**

2. Rodents, other animals, and unwanted vegetation may be controlled to protect public safety. **A10-032**

A11 Winter Recreation Areas

Airborne snowboarder.

Goal

Provide areas for high quality winter recreation (and associated summer) opportunities including: downhill skiing, nordic skiing, snowmobiling, and snowplay within a natural appearing forest environment.

Location

These areas are located in some of the Forest's highest snow depth zones, centered around Mt. Hood. Winter recreation Management Areas include those areas currently under a special use permit or Master Plan, those areas with the potential to be managed for winter use under such a permit or plan, and those areas currently receiving heavy winter recreation use or those areas with potential to provide dispersed winter recreation opportunities, such as cross country skiing and snowplay or over-snow machine use.

All Management Areas are mapped as part of the preferred alternative (see Alternative Q in the accompanying map packet). Other Management Areas representing Management Requirements, e.g. B7 General Riparian Area (unmapped) and B5 Pileated Woodpecker/Pine Marten Habitat Area (see Wildlife Resources map, supplement to Alternative Q, in the map packet), are inclusions within, or may overlap, some A11 Management Area boundaries. B7 and B5 Management Area Prescriptions, as well as, the A11 prescription, apply to these corresponding inclusions or overlaps.

Desired Future Condition

Major Characteristics

- High quality winter recreation activities such as downhill skiing, nordic skiing, cross-country skiing, snowmobiling, and snowplay.
- Opportunities exist for summer recreation activities such as hiking, mountain bicycling, and horseback riding.
- Winter recreation activities occur in a natural-appearing forest environment.
- Winter recreation improvements may be designed for year round use.
- Accessed by improved Forest Roads suitable for passenger cars.
- Snow covered trees and meadows during the winter, and alpine forests, rock outcrops, and flower carpeted meadows during the summer.
- Ski lodges and chair lifts.

Sensory Perceptions

- Evidence of humans may vary from the crowded environment of a developed ski area slope to the quiet environment of a nordic ski trail.
- Other sights, sounds, and smells associated with human activity will generally be noticeable.
- Exhiliration of recreating outdoors in the snow - feeling of "winter wonderland".
- Sounds of children sliding down a slope on innertubes or tobbagans.

A11 Winter Recreation Areas

A. Dispersed Recreation

1. Recreation facilities shall be provided for the purposes of winter recreation opportunities such as cross-country and downhill skiing, snowmobiling and snowplay, for health and safety, or to mitigate impacts from recreational use. **A11-001**

2. Recreation facilities shall remain unobtrusive in the landscape. **A11-002**

3. Dispersed recreation facilities should be located to take advantage of topographic and vegetative screening, and also be located outside of near-foreground view (i.e. 100 feet) from lakes, streams, trails, and key interest features. **A11-003**

4. Recreational livestock may be tied, grazed, or held for extended periods in the near-foreground areas (i.e. 100 feet) of campsites and trails. **A11-004**
    a. Utilization of current year's vegetation growth should not exceed 30 percent (see Forestwide Range Management Standards and Guidelines). **A11-005**
    b. No more than 5 percent of an activity area should be in a detrimental soil condition from the combined impact of compaction, puddling and displacement (see Forestwide Soil Productivity Standards and Guidelines). **A11-006**
    c. Exposed mineral soil around campsites, trails and key interest areas should not exceed 25 percent of the activity area. **A11-007**

5. Recreational livestock should not be grazed within developed areas or areas under Master Plan (FSM 2341) permits. **A11-008**

6. Industrial camping may be allowed in designated areas. **A11-009**

7. The trail system shall be developed and designed to disperse recreational use, and provide a range of difficulty levels consistent with the Management Area management direction. **A11-010**

B. Developed Recreation

1. Development (i.e. including new construction, reconstruction, or relocation of improvements), administration, occupancy, and use of developed sites and facilities shall be consistent with Management Area management direction. Project specific conditions and specifications for developments shall be determined via planning and environmental analyses for master plans (FSM 2341) and/or special use permits. **A11-011** **A11-012**

2. Occupancy and use of developed sites shall be regulated to the extent necessary to protect resources and facilities and to insure the safety and enjoyment of recreating Forest visitors. **A11-013**

3. Developed recreation facilities for summer use may occur consistent with other Management Area management direction. **A11-014**

4. Recreation overnight accomodations (i.e. not including campgrounds) shall not be developed, except within approved Master Plans (and associated environmental analysis). **A11-015**

C. Visual Resource Management

1. New management activities within the Management Area (except parking lots, Nordic ski centers, developed downhill ski areas, and other developed facilities) shall achieve visual quality objectives (VQO) of Retention foreground, and Partial Retention in the middleground and background distance zones, as viewed from the following Highways and Forest Roads: Hwy 26, Hwy 35, old Hwy 35, Hwy 173, Rd 2645, Rd 3512, and Rd 48. **A11-016**

2. Nordic ski centers, developed downhill ski areas, and other developed facilities shall achieve Partial Retention VQO in the foreground, middleground, and background distance zones (as viewed from the view routes listed above in item C.1). **A11-017**

3. Existing conditions found to be inconsistent with prescribed VQOs should be rehabilitated. **A11-018**

4. Parking lots shall achieve a Partial Retention VQO, as viewed from viewroutes listed above in item C.1. **A11-019**

5. Ski lift facilities should achieve a VQO of Partial Retention from sensitivity level 1 trails and riparian areas. See Forestwide Visual Resource Management Standards and Guidelines for prescribed trail VQOs. **A11-020**

D. Cultural Resources Management

See Forestwide Cultural Resources Management Standards and Guidelines.

E. Wildlife and Fisheries

Wildlife and fisheries habitat improvement and rehabilitation activities may occur and shall be consistent with Management Area management direction. **A11-021** **A11-022**

F. Range Management

Existing commercial livestock grazing may be permitted; see Forestwide Range Management Standards and Guidelines regarding forage utilization. **A11-023**

G. Timber Management

1. Regulated timber harvest shall be prohibited. **A11-024**

2. Developed facility master plans or special use permits may allow tree removal to achieve recreation objectives. **A11-025**

3. Timber salvage activities may be allowed to meet recreation objectives, protect resources or facilities, or to insure the safety and enjoyment of Forest visitors. **A11-026**

H. Soil, Water and Air Quality

See Forestwide Soil Productivity, Water, Riparian Area, and Air Quality Standards and Guidelines.

I. Minerals Management

1. See Forestwide Minerals Management Standards and Guidelines.

2. Development of common variety minerals within a developed recreation master plan or permit area shall not be allowed. **A11-027**

3. Developed portions of A11 Winter Recreation Management Areas shall be recommended for withdrawal from mineral entry under the mining (1872 Mining Law) and mineral leasing laws. Provisions shall be made for valid existing mining and leasing rights. **A11-028** **A11-029**

J. Geology

See Forestwide Geology Standards and Guidelines.

K. Lands and Special Uses (and Master Plans)

See Forestwide Lands Program and Special Uses Standards and Guidelines.

L. Transportation Systems/Facilities; Travel and Access Management

1. Roads and associated facilities shall be consistent with prescribed VQOs, recreation objectives, and visitor safety needs. **A11-030**

2. Road management should enhance or maintain recreation opportunities. **A11-031**

3. Vehicle use and use of over-snow machines shall be limited to designated trails and areas to prevent resource damage and recreational use conflicts. **A11-032**

4. Impacts to site conditions within the immediate hydrologic influence zone upslope from Stringer Meadows (A4 Special Interest Area), i.e. within Mt. Hood Meadows A11 Winter Recreation Management Area, shall be minimized. **A11-033**

    a. Road construction (i.e. earth moving) shall not occur. **A11-034**

   b. Over snow vehicles may be permitted only for administrative use and only on one designated route stipulated in the Master Plan. Early winter use of the designated route shall only occur when at least an equivalent of 24 inches of unpacked snow has accumulated. **A11-035 A11-036**

   c. Off-road vehicle use shall be prohibited. **A11-037**

5. Roads, snowplay areas and trails that are designated for skiing or snowplay should be closed to wheeled vehicle use during the snow season. **A11-038**

6. During the snow season, all wheeled vehicles shall be limited to cleared roads and parking areas. **A11-039**

7. Summer off-road vehicle and mountain bicycle use shall occur only on designated trails and roads. **A11-040**

8. Motorized travel shall be allowed in ski area master plans and permits for administrative and permittee use. **A11-041**

9. Pedestrian and equestrian use may occur. **A11-042**

10. Motorized access shall be allowed only within parking lots. **A11-043**

M. Fire Prevention and Suppression

See Forestwide Forest Protection Standards and Guidelines.

N. Wood Residue Management

1. Forest openings created for downhill ski slopes may be managed devoid of wildlife trees, snags and down logs. See Forestwide Soil Productivity, Wildlife and Forest Diversity Standards and Guidelines. **A11-044**

2. Prescribed fire may occur to achieve desired vegetative conditions. **A11-045**

3. Firewood cutting for off-site personal use should not be permitted. **A11-046**

O. Integrated Pest Management

See Forestwide Timber Management Standards and Guidelines regarding Integrated Pest Management.

A12 Outdoor Education Area

Interpretive program near Multnomah Falls.

Goal

Provide opportunities for outdoor public education programs, environmental education, interpretive work, and other general learning activities for groups which focus on the natural and cultural history of the Forest.

Location

This prescription applies to a specific site set aside for outdoor education purposes, i.e. the Underhill Site on the Barlow Ranger District.

The A12 site is mapped as part of the preferred alternative (see Alternative Q in the accompanying map packet). Other Management Areas representing Management Requirements, e.g. B7 General Riparian Area (unmapped) and B5 Pileated Woodpecker/Pine Marten Habitat Area (see Wildlife Resources map, supplement to Alternative Q in the map packet), are inclusions within, or may overlap, some A12 Management Area boundaries. B7 and B5 Management Area prescriptions, as well as the A12 prescription, apply the these corresponding inclusions or overlaps.

Desired Future Condition

Major Characteristics

- Barrier free access is provided.
- Facilities are located in a predominantly natural environment.
- Overnight facilities allowed when consistent with site specific objectives.

- Opportunity for a high degree of interaction between people and with the natural environment.

Sensory Perceptions

- Awareness of natural environment.
- Sense of discovery.

A12 Outdoor Education Areas

A. Dispersed and Developed Recreation

1. Recreation facilities shall be provided for the purposes of: A12-001
   a. maintaining public health and safety.
   b. mitigating environmental impacts from recreational use.
   c. enhancing outdoor education efforts.
2. Dispersed recreation facilities, e.g. trails, trail structures and established campsites, may be permitted. Facilities and campsites should be screened by vegetation or topography from view of trails, lakes, streams and key interest features. A12-002 A12-003
3. Recreational livestock shall not be tied, grazed or held for extended periods of time (e.g. overnight) within foreground areas (i.e. 100 feet) of lakes, streams, campsites, trails or key interest areas. A12-004
4. Recreational off-road vehicle use shall not be permitted. A12-005
5. Trail construction, reconstruction and maintenance shall be consistent with Management Area management direction. A12-006
6. Recreational residence sites shall not be permitted. A12-007

B. Visual Resource Management

1. All management activities within the Management Area (except developed facilities, e.g. buildings) shall achieve a visual quality objective (VQO) of Retention from open roads and high recreation use areas. Developed facilities shall achieve a VQO of Partial Retention. A12-008 A12-009
2. See Forestwide Visual Resource Management Standards and Guidelines for visual quality objectives as prescribed for trails.

C. Cultural Resources Management

See Forestwide Cultural Resources Management Standards and Guidelines.

D. Wildlife and Fisheries

Wildlife and fisheries habitat improvement activities shall be encouraged. A12-010

E. Range Management

Commercial livestock grazing should not be permitted. A12-011

F. Timber Management

1. Regulated timber harvest shall be prohibited. **A12-012**
2. Firewood gathering shall not be permitted except for administrative use. **A12-013**
3. Onsite recreational firewood use may be allowed. **A12-014**
4. Timber salvage activities may occur for public safety or facility protection. **A12-015**
5. Silvicultural techniques may be used to accomplish environmental education and/or other resource objectives. **A12-016**

G. Soil, Water and Air Quality

See Forestwide Soil Productivity, Water, Riparian Area and Air Quality Standards and Guidelines.

H. Minerals Management

1. Development of common variety mineral sources (e.g. sand and gravel) shall not be permitted. **A12-017**
2. Outdoor Education Management Areas shall be recommended for withdrawal from mineral entry under the mining (1872 Mining Law) and mineral leasing laws. Provisions shall be made for valid existing mining and leasing rights. **A12-018** **A12-019**

I. Geology

See Forestwide Geology Standards and Guidelines.

J. Lands and Special Uses

1. See Forestwide Lands Program Standards and Guidelines.
2. Recreation and non-recreation special uses should be discouraged. **A12-020**

K. Transportation Systems/Facilities; Travel and Access Management

1. Roads not necessary to achieve educational objectives shall be closed to recreational travel. Additional roads may be maintained for administrative use. **A12-021** **A12-022**
2. Some existing roads may be closed and obliterated. **A12-023**
3. Trails should be developed to facilitate environmental education and natural resource interpretation. **A12-024**

4. Pedestrian and non-motorized uses shall be encouraged. A12-025

5. Off-road vehicle use shall be prohibited. A12-026

6. Snow-related motorized activities may be permitted. A12-027

L. Fire Prevention & Suppression

See Forestwide Forest Protection Standards and Guidelines.

M. Wood Residue Management

1. Natural levels of down woody material should be maintained to compliment interpretation of natural forest processes. Reduced levels of down woody material may be permitted at developed sites. A12-028 A12-029

2. Prescribed fire may occur. A12-030

N. Integrated Pest Management

1. Herbicides should not be applied outside of road rights-of-way. A12-031

2. If pesticide application is deemed necessary, biological control measures should be considered. See Forestwide Timber Management Standards and Guidelines regarding Integrated Pest Management. A12-032

A13 Bald Eagle Habitat Area

Goal

Protect and manage bald eagle nesting and winter communal roost areas in order to meet or exceed recovery levels established in the Pacific Bald Eagle Recovery Plan (1986). A secondary goal is to maintain a mature and overmature stand condition.

Location

Management Areas have been designated in the nine recovery vicinities identified by the United States Fish and Wildlife Service in the Pacific Bald Eagle Recovery Plan (1986). They are generally located near bodies of water 40 acres or greater in size with food sources appropriate for nesting bald eagles.

A13 Management Areas are mapped as part of the preferred Alternative Q, but are not indicated on the Alternative Q maps. They are, however, mapped on the Wildlife Resources map, supplement to Alternative Q, enclosed in the accompanying map packet. A13 Management Areas override and replace the Management Areas indicated on the Alternative Q map. A13 prescriptions apply.

Other Management Areas representing Management Requirements, e.g. B7 General Riparian Area (unmapped) and B5 Pileated Woodpecker/Pine Marten Habitat Area (see Wildlife Resources map, supplement to Alternative Q) may be inclusions within or may overlap A13 Management Area boundaries. A13 prescriptions predominate.

Desired Future Condition

Major Characteristics

- The predominant stand condition is mature and overmature forest.
- Within one mile of a large body of water.
- Large number of tall, early decay class snags.
- Human access is limited.
- Large body of water within sight from the top of the forest canopy.
- A minimum core of at least 30 acres.
- Variety of tree sizes; large trees are abundant.
- Abundant snags in a variety of size and decay classes.
- Multiple canopy layers.

Sensory Perceptions

- Placid/serene environment.
- Cool and sheltered micro climate.
- Canopy closed, diffused lighting.
- Visual diversity of vegetation.
- Scents of richness, pure air.
- Moist ground and vegetation.

A13 Bald Eagle Habitat Area

A. Dispersed and Developed Recreation

1. New developed recreation facilities shall not be constructed. **A13-001**

2. Development of new trails and facilities shall not be permitted unless determined to have no conflict with nesting eagles. Trail reconstruction, construction and maintenance should not occur within active bald eagle nesting areas between January 1 and August 15. **A13-002** **A13-003**

3. Dispersed recreation use shall be discouraged between January 1 and August 15. Discouraged uses shall include (but not be limited to) use of firearms, camping, picnicing and low-level aerial flights. **A13-004** **A13-005**

4. Recreational access into active nesting territories shall be prohibited between January 1 and August 15; designated trails or roads may be excepted if determined to have no effect on nesting bald eagles. **A13-006**

B. Visual Resource Management

1. Management activities within in the Management Area shall achieve a visual quality objective (VQO) consistent with the prescription for the Management Area designated on the Alternative Q map at the location of the A13 Management Area. Exceptions may occur within "designated viewsheds" (see Forestwide Visual Resource Management Standards and Guidelines regarding designated viewshed VQOs). **A13-007** **A13-008**

2. See Forestwide Visual Resource Management Standards and Guidelines regarding VQOs prescribed for trails.

C. Cultural Resources Management

See Forestwide Cultural Resources Management Standards and Guidelines.

D. Wildlife and Fisheries

1. Habitat improvement activities which encourage mature forest and/or old growth habitat associated species shall be emphasized. **A13-009**

2. Fisheries habitat improvement activities may occur except between January 1 and August 15. **A13-010**

3. In westside-Cascade habitat conditions, at least 14-16 trees per acre greater than 125 feet high and 18-21 trees per acre 75-125 feet high shall be retained or provided. In eastside-Cascade habitat conditions, at least 8-10 trees per acre greater than 100 feet high and 28-33 trees per acre 50-100 feet high shall be retained or provided. **A13-011** **A13-012**

4. Large, tall trees with large limbs near the top of the tree crown shall be favored for retention. A13-013

5. See Forestwide Threatened, Endangered and Sensitive Species Standards and Guidelines regarding replacing habitat lost due to catastrophic events, e.g. fire on windthrow.

E. Range Management

1. Existing commercial livestock grazing may occur (see Forestwide Range Management Standards and Guidelines). A13-014

2. Livestock holding facilities (e.g. corrals and loading chutes) shall not be permitted. A13-015

3. Livestock salt blocks and watering troughs should not be permitted. A13-016

F. Timber Management

1. Regulated timber harvest shall be prohibited. A13-017

2. Timber harvest and silvicultural treatments may be permitted to achieve bald eagle habitat objectives. A13-018

3. Timber salvage activites may be permitted consistent with bald eagle habitat objectives. A13-019

4. Firewood gathering may occur only in designated decks. A13-020

5. Timber harvest activites and firewood cutting shall not occur between January 1 and August 15 within active eagle areas. A13-021

G. Soil, Water and Air Quality

See Forestwide Soil Productivity, Water, Riparian Area, and Air Quality Standards and Guidelines.

H. Minerals Management

1. See Forestwide Minerals Management Standards and Guidelines.

2. Common variety mineral (i.e. sand and gravel) development operations shall not be conducted between January 1 and August 15. A13-022

3. Mineral exploration activities shall be discouraged between January 1 and August 15. A13-023

I. Geology

See Forestwide Geology Standards and Guidelines.

J. Lands and Special Uses

1. Lands within A13 shall be retained. See Forestwide Lands Program Standards and Guidelines regarding land exchanges. **A13-024**

2. New rights-of-way shall not be permitted. **A13-025**

3. Recreational and non-recreational special uses, permits, leases and easements should not occur. Existing special uses not consistent with Management Area management direction should be terminated. **A13-026** **A13-027**

K. Transportation Systems/Facilities, Travel and Access Management

1. Roads and other access may be restricted between January 1 and August 15 depending upon bald eagle presence in the area. **A13-028**

2. Dispersed recreation shall be discouraged between January 1 and April 15. **A13-029**

3. Recreational off-road vehicle use shall be restricted to designated trails and shall be prohibited in active nesting areas between January 1 and August 15. **A13-030** **A13-031**

4. All modes of off-trail travel shall be discouraged. **A13-032**

L. Fire Prevention and Suppression

1. See Forestwide Forest Protection Standards and Guidelines.

2. See Forestwide Forest Protection, Initial Attack Standards and Guidelines (item D.4) regarding Resource Advisors.

M. Wood Residue Management

1. See Forestwide Soil Productivity, Wildlife and Forest Diversity Standards and Guidelines regarding coarse woody debris. **A13-033**

2. Large snags and snag-topped trees extending into the upper forest canopy should be retained as perch trees. **A13-034**

3. Prescribed burning may occur to achieve bald eagle habitat objectives. **A13-035**

4. Wildlife trees shall be maintained to provide habitat sufficient to support at least 90 percent of the maximum biological potential of primary cavity dependent species, e.g. woodpeckers. **A13-036**

N. Integrated Pest Management

1. Herbicide application shall not be permitted. **A13-037**
2. If insect epidemics threaten timber stands and bald eagle habitat quality, biological control measures should be considered. **A13-038**

Category "B" Management Areas

The following 12 Management Areas have primary goals other than timber production; however, timber production is recognized as a secondary goal. Regulated timber harvest is a planned output.

• B1	Wild, Scenic and Recreational Rivers
• B2	Scenic Viewsheds
• B3	Roaded Recreation
• B4	Pine-Oak Habitat
• B5	Pileated Woodpecker/Pine Marten Habitat Area
• B6	Special Emphasis Watersheds
• B7	General Riparian Area
• B8	Earthflow
• B9	Wildlife/Visual Area
• B10	Deer and Elk Winter Range
• B11	Deer and Elk Summer Range
• B12	Backcountry Lakes

B1 Wild, Scenic & Recreational Rivers

Goal

Protect and enhance the resource values for which a river was designated into the Wild and Scenic Rivers System. The specific goals for Wild, Scenic, and Recreational classified river segments are:

Wild

Perpetuate a primitive recreational experience and protect the river corridor to maintain an essentially unmodified environment.

Scenic

Maintain or enhance quality scenery and protect the essentially undeveloped character of the shoreline.

Recreational

Provide opportunities for recreational activities and maintain visual quality of the river corridors.

Location

This Management Area applies to an interim corridor extending the length of the designated river segment, and extending in width one-quarter mile laterally from each bank of the following rivers (Public Law 90-542, Wild and Scenic Rivers Act 1968):

- Clackamas River
- Roaring River
- Sandy River
- Salmon River
- White River

The interim corridor boundary will be re-evaluated, and likely modified, during planning and environmental analysis for development of river management project implementation plans.

B1 Management Areas are not mapped in their entirety on the preferred alternative map (see Alternative Q in the accompanying map packet). Other Management Areas with prescriptions more restrictive to vegetation and access management (i.e. A2, A4, A7, A8, A9, A11, A13, and B8) are designated within the Wild and Scenic River corridors on the Alternative Q map or the Wildlife Resources map, a supplement to Alternative Q. Prescriptions for A2, A4, A7, A8, A9, A11, A13 and B8 apply as shown on the Alternative Q maps; the B1 prescription also applies. If inconsistencies occur between prescriptions, the Standards and Guidelines most restrictive to vegetation and access management predominates. For example, the A8 Northern Spotted Owl Habitat Area prescription allows for off-road vehicle (ORV) use on designated trails outside of the spotted owl reproduction season, and the B1 prescription prohibits ORV use in wild river segment corridors; therefore, in Roaring River where A8 overlays the B1 wild river corridor, ORV use is prohibited. The entire B1 Management Area corridors are displayed on the Designated Viewshed map, a supplement to the Alternative Q map.

Other Management Areas representing Management Requirements, e.g. B7 General Riparian Area (unmapped) and B5 Pileated Woodpecker/Pine Marten Habitat Are (see Wildlife Resources map, supplement to Alternative Q), are inclusions within or overlap some B1 Management Area boundaries. B7 and B5 Management Area prescriptions, as well as, the B1 prescription applies to these corresponding inclusions.

Desired Future Condition

Major Characteristics

- Congressionally designated areas of National significance.
- River corridors divided into wild, scenic, and recreational segments with each providing different opportunities.
- Significant examples of the following features are often located in the river corridors:
    - Deep, incised canyons and gorges.
    - Old growth forests.
    - Glacier-fed headwaters.
    - Outstanding views of majestic mountains and river canyons.
    - Alpine and sub-alpine meadows.

Wild Segments

- The corridor is essentially free of recreation facilities and signs.
- Access is generally by trail or water.
- The corridor is essentially an unmodified environment.
- Motorized boats are not present.
- Minimal evidence of recreational users.
- Very low interaction between recreational users.

Scenic Segments

- Shorelines are typically undeveloped.
- Characterized by a natural-appearing environment with high quality scenery.

- Accessed by roads and trails, and seen from major travel routes paralleling the river.
- Motorized boats are not present.
- Low interaction between recreational users, but with evidence other recreational users are present.
- Minimal on-site controls of recreational use patterns.

Recreational Segments

- Visible public roads parallel the river. Developments such as campgrounds are closeby.
- Access is by roads and trails.
- Opportunities exist for a wide variety of river related recreation activities.
- Characterized by a predominately natural-appearing environment.
- Dispersed motorized recreation activities such as car camping, motorcycle use, boating, and snowmobiling occur.
- Motorized boats may be present.

Sensory Perceptions

- In Wild segments: isolation, tranquility, and closeness to nature may be experienced with few intrusions from the sights and sounds of human activity.
- In Scenic segments: isolation, tranquility, and closeness to nature may be experienced; the sights and sounds of human activity are present, but are subordinate to the river experience.
- In Recreational segments: the sights and sounds associated with human activity are common.

B1 Designated Wild, Scenic, and Recreational Rivers

The following Standards and Guidelines apply to segments of five Congressionally designated Wild and Scenic Rivers (PL 100-557 Omnibus Oregon Wild and Scenic Rivers Act of 1988). The river corridors for the following rivers are displayed on Map Four-9:

- Clackamas River
- Roaring River
- Salmon River
- Sandy River
- White River

The intent of the following Standards and Guidelines is to protect and enhance the outstandingly remarkable values for which each river was designated and to protect their free-flowing characteristics.

A. General

1. All management activities in the river corridors shall protect and/or enhance the identified outstandingly remarkable values. (FSH 1909.12, Chapter 8, 7/87). The outstandingly remarkable values shall be identified via environmental analysis for river-specific implementation management plans. River-specific plans shall be consistent with Management Area management direction. **B1-001** **B1-002** **B1-003**

2. The free-flowing characteristics of the river shall be protected (PL 90-542, Wild and Scenic Rivers Act, 1968.) **B1-004**

3. River characteristics necessary to support the existing classification of Wild, Scenic, or Recreational shall be protected during all management activities [Federal Register, Vol. 47, No. 173 9/82 (Interagency Guidelines)]). **B1-005**

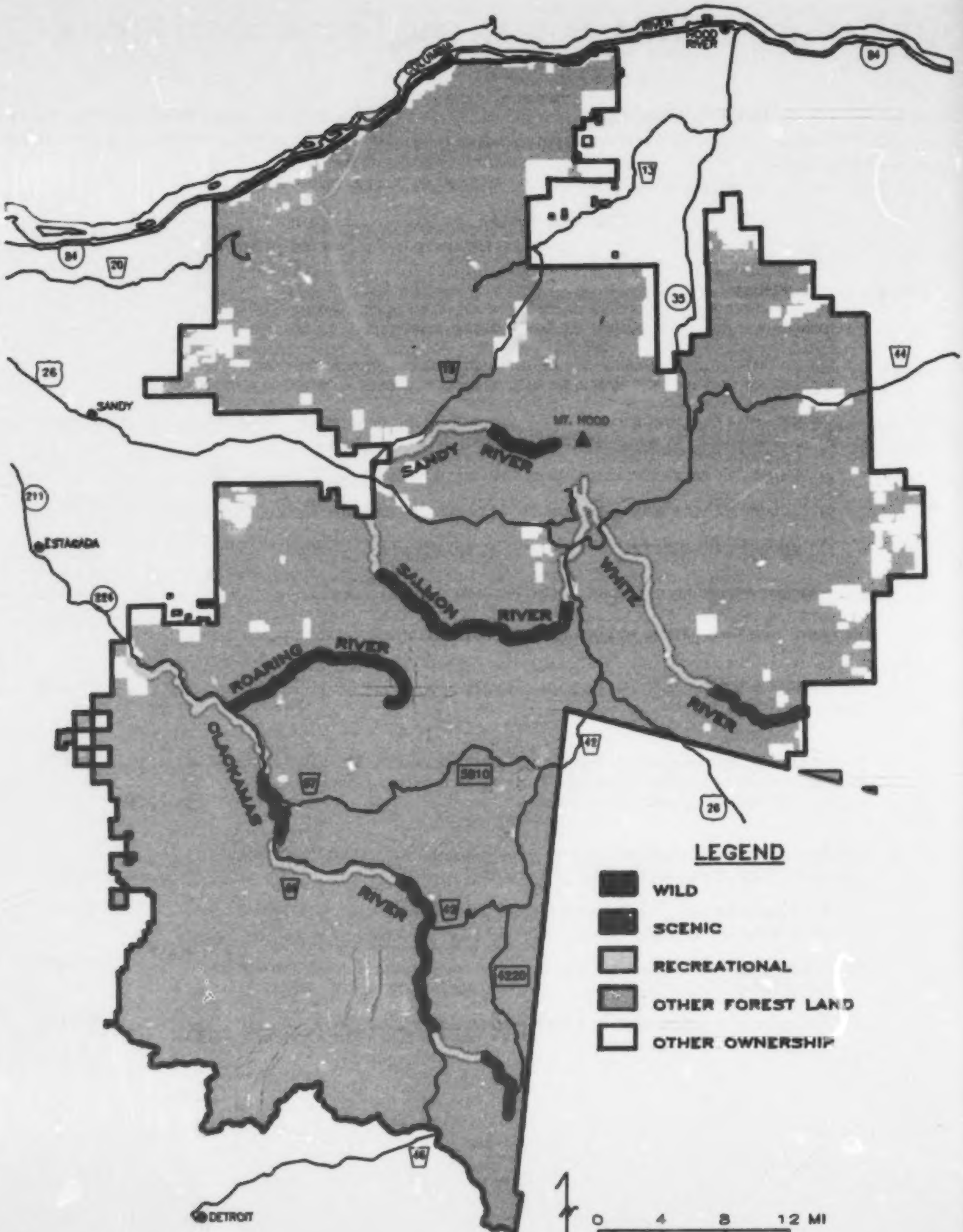
4. Management activities shall be consistent with prescribed Recreation Opportunity Spectrum (ROS) classes (FSM 2311.1).

    a. Wild segments shall provide primitive non-motorized and/or semi-primitive non-motorized ROS settings. **B1-006**

    b. Scenic segments shall provide semi-primitive non-motorized and/or semi-primitive motorized ROS settings. **B1-007**

    c. Recreational segments shall provide roaded natural ROS settings. **B1-008**

Map Four-9 Designated Wild and Scenic Rivers


COLUMBIA
RIVER
HOOD RIVER
84
20
35
26
SANDY
MT. HOOD
SANDY RIVER
44
211
ESTACADA
224
SALMON RIVER
WHITE RIVER
ROARING RIVER
CLACKAMAS RIVER
42
3810
26
4220
46
DETROIT
LEGEND
WILD
SCENIC
RECREATIONAL
OTHER FOREST LAND
OTHER OWNERSHIP
0
4
8
12 MI

B. Specific Resource Values

1. Dispersed Recreation Facility and Site Construction, Administration and Management

a. Dispersed recreation improvements (e.g. trails) shall be provided to: **B1-009**

   1) Minimize site degradation in wild and scenic segments.

   2) Provide for comfort and convenience of users in recreational segments.

   3) Provide a minimum of convenience in scenic segments.

b. River recreational use levels should be managed to maintain the prescribed ROS classes. **B1-010**

c. Recreational livestock use should be allowed in all segments, provided river banks, riparian vegetation, and scenic quality are protected from adverse impacts. **B1-011**

d. Recreational livestock may be tied, grazed or held overnight or for entended periods of time within the near-foreground areas (i.e. 100 feet) of campsites, trails, and key interest areas. **B1-012**

   1) Utilization of current year's vegetation growth should not exceed 30 percent (see Forestwide Range Management Standards and Guidelines). **B1-013**

   2) No more than 5 percent of an activity area should be in a detrimental soil condition from the combined impact of compaction, puddling and displacement (see Forestwide Soil Productivity Standards and Guidelines). **B1-014**

   3) Exposed mineral soil around campsites, trails and key interest areas should not exceed 25 percent of the activity area. **B1-015**

2. Developed Recreation Facility and Site Construction, Administration and Management

a. Developed recreation improvements shall be provided to: **B1-016**

   1) Minimize site degradation in wild and scenic segments.

   2) Provide for comfort and convenience of users in recreational segments.

   3) Provide a minimum of convenience in scenic segments.

b. No new developed recreational sites shall be planned for wild segments. Existing developed recreation sites may be converted to dispersed sites. New developed sites may be allowed in both scenic and recreational segments. **B1-017** **B1-018** **B1-019**

c. Developed sites of more than 20 units should be discouraged in Scenic river corridors. **B1-020**

3. Wilderness

Where B1 river corridors extend into A2 Wilderness Management Areas, A2 prescriptions predominate.

4. Visual Resource Management

All management activities shall achieve the following visual quality objectives (VQO): **B1-021**

a. The VQO for wild segments shall be Preservation as seen from the river, river banks, and trails within the B1 river corridor. A VQO of Retention may be allowed for recreation facilities. B1-022 B1-023

b. The VQO for scenic segments shall be Retention as seen from the river, river banks, U.S. and State highways, Forest highways and roads, trails, and recreation facilities within the B1 river corridor. A VQO of Partial Retention may be allowed for structural facilities. B1-024 B1-025

c. The VQO for recreational segments shall be Partial Retention as seen from the river, river banks, U.S. and State highways, Forest highways and roads, trails, and recreation facilities within the B1 river corridor. Modification may be allowed for structural facilities. B1-026 B1-027

d. Exceptions to the above VQOs may occur within "designated viewsheds" (see Forestwide Visual Resource Management Standards and Guidelines regarding designated viewshed VQOs). B1-028

e. See Forestwide Visual Resource Management Standards and Guidelines for VQOs prescribed for trails.

5. Cultural Resources Management

See Forestwide Cultural Resources Standards and Guidelines.

6. Wildlife and Fisheries

a. Habitat improvement practices should be limited to those which are necessary for the protection, conservation, rehabilitation, or enhancement of river area resources. B1-029

b. Habitat improvement projects should not introduce non-native species that could significantly change the natural ecosystem. B1-030

c. Habitat improvement structures should mimic regular occurring natural events (as opposed to catastrophic); e.g. trees falling in and across the river, boulders falling in or moving down the river course, minor bank sloughing, erosion or undercutting, island building and opening or closing of existing secondary channels. B1-031

d. Habitat improvement structures shall not create unusually hazardous conditions or substantially interfere with existing, or reasonably anticipated, recreational use of the river such as fishing, kayaking, conoeing, rafting, tubing, or swimming. B1-032

7. Range Management

a. Existing commercial livestock grazing may be permitted, provided river banks and riparian vegetation are protected from adverse impacts (see Forestwide Range Standards and Guidelines regarding forage utilization). B1-033

b. Permits may be re-issued on vacant allotments if river related resource values are not compromised. Allotment Management Plans shall be consistent with Management Area management direction. B1-034 B1-035

c. Range improvements may occur in any river classification to protect or enhance river-related values. B1-036

d. Corrals and loading chutes should not be permitted. B1-037

8. Timber Management

a. Within wild river segments, regulated timber harvest shall be prohibited. Unregulated timber harvest and salvage activities may occur only for insect or disease control, fire, natural catastrophy, disasters, public safety or under specified conditions on valid mining claims (FSM 2354.42). B1-038 B1-039

b. Within scenic river segments, regulated timber harvest should occur and shall be designed to restore, protect, or enhance the ROS setting and/or achieve the prescribed VQO throughout the river corridor. See Forestwide Timber Management Standards and Guidelines regarding even-age and un-even age timber management. B1-040 B1-041

c. Within recreational segments, regulated timber harvest should occur; silvicultural prescriptions should protect or enhance river values. B1-042 B1-043

   1) Uneven-age management should be considered in portions of the river corridor visible from the river, river banks, U.S. and State Highways, Forest roads, trails and recreation facilities within the B1 river corridor. B1-044

   2) Even-age management may occur if visual quality objectives can be met. Even-age management should be considered in portions of the corridor which cannot be seen from the river, river banks, highways, roads, trails, and recreation facilities within the B1 river corridor. B1-045 B1-046

d. Timber salvage activities to harvest windthrown, insect attacked, fire damaged, diseased trees, or other similar natural tree mortality for protection of the Forest, Forest visitors or river-related resource values shall be permitted in scenic and recreational segments. All river banks shall be protected during logging activities. B1-047

9. Soil, Water and Air Quality

a. Water quality shall be maintained or enhanced (See Forestwide Water Standards and Guidelines). B1-048

b. Watershed management and improvement projects may be permitted. B1-049

c. All wild, scenic, and recreational rivers segments shall be managed to remain in a free-flowing and unpolluted state. B1-050

10. Minerals and Energy Management

a. Mineral development under the mining (1872 Mining Law) and mineral leasing laws shall not be permitted within 1/4 mile of wild segment river banks. Provisions shall be made for valid existing mining and leasing rights. B1-051 B1-052

b. Locatable minerals shall be recommended for withdrawal from development under the mining law (1872 Mining Law) within the B1 corridor for scenic and recreational river segments. Provision shall be made for valid existing mining rights. B1-053 B1-054

c. All new dams, major water diversions, and hydroelectric power facilities shall be prohibited. B1-055

d. Leaseable mineral (e.g. geothermal) permits shall include a "No Surface Occupancy" stipulation for that portion of the permit potentially affecting river resource values. B1-056

e. Common variety mineral (e.g. sand and gravel) development shall not be permitted within any river segments. An existing permit on the White River upstream from Highway 35 shall be an exception. B1-057 B1-058

f. Plans of Operation for mineral exploration and development shall include reasonable, operationally feasible requirements to minimize conflicts with recreational activities and to protect the character of the landscape within the river corriodor. B1-059

   1) Surface occupancy, if allowed, shall be designed to have the least possible effect on river related values. B1-060

   2) Site disturbance from mineral activities shall be rehabilitated within 3 years following project completion. B1-061

3) During project operation, disturbed soils shall be stabilized prior to the autumn high rainfall season. B1-062

g. All mineral exploration and development shall be done in a manner to protect river resource values. B1-063

11. Geology

See Forestwide Geology Standards and Guidelines.

12. Lands and Special Uses

a. National Forest System lands within river corridors shall be retained. See Forestwide Lands Program Standards and Guidelines. B1-064

b. Existing special uses, including recreation and non-recreation uses, may be allowed to continue where consistent with Management Area management direction. Special uses that do not meet Management Area direction shall be terminated or phased out. B1-065 B1-066

c. New special use permits may be issued within all segments when consistent with the Management Area management direction. B1-067

d. Construction of new utility and/or transmission lines (e.g. gas lines, geothermal and water pipelines, and electrical transmission lines) should not be allowed within any river segment. B1-068

e. Applications for licenses from the Federal Energy Regulatory Commision to construct any impoundment, water conduit, reservoir, powerhouse, transmission line, or other associated hydroelectric facility within any designated river segment shall be recommended for denial. B1-069

f. All non-hydroelectric dams not presently authorized by the Forest Service shall be prohibited. B1-070

13. Transportation Systems/Facilities; Travel and Access Management

a. Within wild river corridors, new roads shall not be constructed and existing roads may be phased out and rehabilitated. B1-071 B1-072

b. Within scenic segments, new roads and associated facilities and structures are discouraged, but may be constructed when no other reasonable alternative for necessary access exists. B1-073 B1-074

c. Within recreational segments, new roads may be constructed. B1-075

d. Within wild river corridors, motorized recreational use shall not be allowed. B1-076

e. Within scenic and recreational river corridors, motorized use shall be limited. B1-077

1) Motorized vehicles shall be permitted only on open roads. B1-078

2) Off-road vehicles (ORV) may occur only on designated trails. B1-079

3) Motorized water craft shall be prohibited within scenic segments, but may occur within recreational segments. B1-080 B1-081

f. Areas, roads and segments of rivers closed to vehicle use shall be posted. Administrative use of motorized vehicles shall be allowed in all river segments. B1-082 B1-083

g. Mountain bicycle use should be accepted on designated trails. B1-084

h. Pedestrian and equestrian use should be encouraged. B1-085

14. Fire Prevention and Suppression

a. Off-road vehicle travel within the designated river corridors shall not be permitted except for emergency fire suppression purposes. B1-086

b. Use of tractors to construct firelines may be permitted only in emergency fire suppression situations. Fireline locations shall consider protection of river related resource values. B1-087 B1-088

c. Fire retardant "drops" should be directed to minimize entry of chemicals into water courses and to protect river values. B1-089

d. See Forestwide Forest Protection Standards and Guidelines.

15. Wood Residue Management

a. See Forestwide Soils Productivity, Wildlife, and Forest Diversity Standards and Guidelines regarding coarse woody debris.

b. Prescribed burning may occur to protect or enhance river-related values. B1-090

16. Integrated Pest Management

See Forestwide Timber Management Standards and Guidelines regarding Integrated Pest Management.

B2 Scenic Viewsheds

Ox-eye daisies with Lupine.

Goal

Provide attractive, visually appealing forest scenery with a wide variety of natural appearing landscape features. Utilize vegetation management activities to create and maintain a long term desired landscape character.

Location

These management areas include landscapes which are visible from selected travel routes, rivers and lakes, major viewpoints, and popular recreation areas.

B2 Management Areas are mapped as part of the preferred alternative (see Alternative Q in the accompanying map packet). Other Management Areas with prescriptions more restrictive to vegetation and access management (i.e. A2, A4, A5, A6, A7, A8, A9, A10, A11, A12, A13, B1 and B8) are designated within B2 Scenic Viewsheds on the Alternative Q map or the Wildlife Resources map (a supplement to Alternative Q). Prescriptions for A2, A4, A5, A6, A7, A8, A9, A10, A11, A12, A13, B1 and B8 as shown on the Alternative Q maps, predominate. However, visual quality objectives (VQO) for the areas where these Management Areas overlap B2, are prescribed by distance zone and viewpoint in Table Four-24 (see Forestwide Visual Resource Management Standards and Guidelines). Map Four-7 Designated Viewsheds, supplement to Alternative Q, displays the entire selected viewsheds regardless of Management Area, as well as, the areas where designated viewsheds overlap and VQOs are prescribed for multiple viewer positions. Table Four-24 displays the prescribed VQOs for the Designated Viewsheds delineated on Map Four-7.

Other Management Areas representing Management Requirements, e.g. B7 General Riparian Area (unmapped) and B5 Pileated Woodpecker/Pine Marten Habitat Area (see Wildlife Resources map, supplement to Alternative Q), are inclusions within or overlap some B2 Management Area boundaries. B7 and B5 Management Area prescriptions predominate, and apply to the corresponding inclusions.

Desired Future Condition

Major Characteristics

The visual character of the landscape results from prescribed visual quality objectives within distance zones from selected viewer positions. Visual management intensities, a combination of visual quality objective and distance zone, provide the following visual character from selected viewer positions.

Foreground Retention

This visual management intensity applies to lands visible up to a distance of 0.5 mile from selected travelways, water bodies or public use areas.

- Vegetation is composed primarily of multi-age, multi-species stands with a diverse understory of natural plant associations.
- Numerous large diameter, old trees are a major component of the stands.
- Small, natural appearing openings provide diversity and a sense of depth.
- The ground is generally free of unnatural forms and patterns of debris and litter.
- Seasonal changes in vegetation color and texture are noticeable
- The target tree diameters for mature trees with following vegetation types are:

grand fir (Ponderosa pine), 24 inches dbh (diameter at breast height)

Pacific silver fir, 26 inches dbh (diameter at breast height)

western hemlock, 32 inches dbh (diameter at breast height)

Mountain hemlock, 24 inches dbh (diameter at breast height)

Foreground Partial Retention

This visual management intensity applies to lands visible up to a distance of 0.5 mile from selected travelways, water bodies, or public use areas.

- Vegetation is composed of a diversity of tree and shrub species of various sizes and ages, distributed in natural appearing patterns.
- Seasonal changes in vegetation color and texture are noticeable.
- Natural appearing openings provide diversity and enhance views to landscape features.
- The ground is generally free of unnatural patterns of debris and litter.

- The target tree diameters for mature trees in the following vegetation types are:

  grand fir (Ponderosa pine), 21 inches dbh (diameter at breast height)

  Pacific silver fir, 23 inches dbh (diameter at breast height)

  western hemlock, 21 inches dbh (diameter at breast height)

  mountain hemlock, 21 inches dbh (diameter at breast height)

Middleground Retention

This visual management intensity applies to lands visible from 0.5 mile to 5.0 miles from selected travelways, water bodies, or public use areas.

- Natural appearing forest landscape
- Management activities are not visually evident.
- A diversity of species, colors, and textures is present.

Middleground and Background Partial Retention

This visual management intensity applies to lands visible for distances from 0.5 mile to 5.0 miles from the selected travelways, water bodies, or public use areas.

- Natural appearing forest landscape, with little evidence of human alteration.
- Dominant visual impression is mostly continuous tree canopies, with diversity in occasional natural appearing openings.
- Mosaic of species and age classes add texture and color contrast in natural patterns.
- Management activities repeat form, line, color, and texture common to the characteristic landscape.

Middleground and Background Modification

This management intensity applies to lands visible for distances farther than 0.5 mile from selected travelways, water bodies, or public use areas.

- Diversity of species and ages distributed in patterns similar to, and compatible with the characteristic landscape.
- Management activities are blended with natural landforms and existing vegetation with natural shapes, edges, patterns, and sizes.
- Views of interesting landscape features.
- Offers a wide variety of land uses and recreation opportunities.

B2 Scenic Viewshed

A. Dispersed and Developed Recreation

1. Structures and impovements may be provided to protect resource values, for administrative purposes, and to accommodate recreational use. **B2-001**

2. Dispersed recreational use should be encouraged. Campsites should be located to take advantage of topographic and vegetative screening, and should be located outside of near-foreground view (i.e. 100 feet) from lakes, streams, trails and key interest features. **B2-002** **B2-003** **B2-004**

3. A trail system should be developed and designated to disperse recreational use, and provide a range of difficulty levels. **B2-005**

4. Recreational livestock may be tied, grazed, or held extended periods within the near-foreground (i.e. 100 feet) of campsites and trails. **B2-006**

   a. Utilization of current year's vegetation growth should not exceed 30 percent (see Forestwide Range Management Standards and Guidelines). **B2-007**

   b. No more than 5 percent of an activity area should be in a detrimental soil condition from the combined impact of compaction, puddling and displacement (see Forestwide Soil Productivity Standards and Guidelines). **B2-008**

   c. Exposed mineral soil around campsites, trails and key interest areas should not exceed 25 percent of the activity area. **B2-009**

5. Industrial camping may occur in designated locations, but should not be visible from designated viewer positions within areas with visual quality objectives (VQOs) of foreground Retention or foreground Partial Retention. **B2-010**

6. Developed recreation facilities may be permitted. **B2-011**

B. Visual Resource Management

1. Management activities shall achieve prescribed VQOs from the identified viewer positions as displayed in Table Four-23 Designated Viewsheds. See A11 Winter Recreation Areas for exceptions. **B2-012**

2. See Forestwide Visual Resource Management Standards and Guidelines regarding prescribed VQOs for trails.

Table Four-23 Designated Viewsheds

Designated viewsheds are listed, along with their related viewer positions, and Visual Quality Objectives for three distance zones from the viewer positions.

Designated Viewsheds	Viewer Position	Visual Quality Objective		
		FG	MG	BG
Larch Mountain	Road 15, Rec Site	R	PR	PR
Lost Lake	Road 13, Lake, Campground	R	PR	PR
Hood River Valley	OR Hwy 35	R	PR	PR
Highway 35, N. Bennett Pass	OR Hwy 35, Rec. Sites	R	PR	PR
Highway 35, S. Bennett Pass	OR Hwy 35, Rec. Sites	R	R	PR
Highway 26, West of Jct/ Hwy 35	US Hwy 26, Rec. Sites	R	R	PR
Highway 26, East of Jct/Hwy 35	US Hwy 26, Rec. Sites	R	PR	PR
Timberline Road	OR Hwy 173	R	PR	PR
Timberline Lodge	Lodge	R	PR	PR*
Dufur Mill Road	Road 44	R	PR	PR
Trillium Lake	Road 2656, Lake, Dam, CG	R	PR	PR
Skyline Road	Road 42 (Jct. Hwy 26-Rd 57)	R	PR	PR
Highway 216	OR Hwy 216	R	PR	PR
Timothy Lake	Road 57, Lake, PCNST	R	PR	PR
Rock Creek Reservoir	Lake, Campgrounds	R	PR	PR
Lower Clackamas	OR Hwy 224, Campgrounds	R	PR	PR
Upper Clackamas, N. of Rd 4690	Road 46, Campgrounds	R	PR	PR
Upper Clackamas, S. of Rd 4690	Road 46, Campgrounds	PR	M	M
Hot Springs Fork	Rd 63 & Rd 70, Rec. Sites	PR	PR	M
Oak Grove Fork	Road 57	R	PR	PR
White River road	Road 48	PR	M	M
Clear Lake	Lake, Shoreline, Campground	PR	M	M

Designated Wild, Scenic, and Recreational River Viewsheds

River	Segment	Viewer Position	Visual Quality Objective		
			FG	MG	BG
Clackamas		River Trails			
	Recreation		PR	PR	PR
	Scenic		R	PR	PR
Roaring		River, Trails			
	Recreation		PR	PR	PR
	Wild		P	R	PR
Sandy		Roads 18, 1825, 1825100, Trail 797, Campgrounds			
	Recreation		PR	PR	PR
	Wild		P	R	PR
Salmon		River			
	Recreation		PR	PR	PR
	Wi;d		P	R	PR
White		River			
	Recreaton		PR	PR	PR
	Scenic		R	PR	PR

LEGEND

Distance Zones
FG = Foreground (up to 0.5 mile)
MG = Middleground (0.5 to 5 miles)
BG = Background (beyond 5 miles)

Visual Quality Objectives
P = Preservation
R = Retention
PR = Partial Retention
M = Modification

*Background distance from 5 miles to approximately 12 miles = PR

3. Opportunities for viewing unusual landscape features, (e.g. peaks, rock forms and water forms) may be designed into development of projects. **B2-013**

4. Landscapes inconsistent with prescribed VQOs (Table Four-24) shall be planned and scheduled for rehabilitation. **B2-014**

5. Unacceptable changes in form, line, color and/or texture resultant from management activities should be corrected within the first year after the activity occurs. **B2-015**

6. Insect, disease or catastrophic occurrences may require deviation from VQOs for extended periods of time. Management activities to minimize the visual resource impact shall be encouraged. **B2-016** **B2-017**

C. Cultural Resource Management

See Forestwide Cultural Resources Management Standards and Guidelines.

D. Wildlife and Fisheries

1. Wildlife and fisheries habitat improvement activities snould be permitted. **B2-018**

2. Deer and elk winter range habitat values shall be maintained within the portions of B2 Scenic Viewshed Management Areas listed in Table Four-30 **B2-019**

    a. Human access should be restricted between December 1 and April 1 to reduce interaction with wintering deer and elk. **B2-020**

    b. At least 50 percent of the area should be maintained as optimal or thermal cover. **B2-021** At least 25 percent should be optimal cover. **B2-022**

    c. At least 75 percent of all regeneration and commercial thinning timber harvest units should provide nutritional forage enhancement for deer and elk. Examples of forage enhancement include: **B2-023**

        1) seeding or planting with high quality forage species, e.g. white clover, subterranian clover, orchard grass, red-osier dogwood, and red-stem ceanothus.

Table Four-30 Deer and Elk Winter Range Within B2 Scenic Viewsheds

Portion of B2	Ranger District
West Fork Neal Creek	Hood River
West aspects (below approximately 3,500 feet) of the North-South Ridge System including Bald Butte, Surveyor's Ridge, Rim rock and Shellrock Mountain.	Hood River
Lower Puppy Creek	Hood River
Trout Creek	Hood River
Crystal Spring Creek	Hood River
Middle Fork Hood River	Hood River
Lower Bear Creek and Little Creek	Hood River
Lower Pinhead Creek and Fall Creek	Clackamas
Kansas Creek below Road 4651	Clackamas
Lower Pot, Pan, Wolf, Cabin and Campbell Creeks below Road 4660	Clackamas
Austin Point	Clackamas

2) prescribed fire, e.g. broadcast burning

3) fertilizing

d. Broadcast burning should not occur within foreground areas. **B2-024**

e. Blocks of cover should be at least 600 feet wide and at least 30 acres in size. **B2-025**

f. Timber harvest operations should be restricted, and may be excluded, between December 1 and April 1. **B2-026**

g. Mineral development should not occur between December 1 and April 1. **B2-027**

h. Open road density between December 1 and April 1 shall not exceed 1.5 miles of road per square mile. **B2-028**

i. Motorized vehicle use shall occur only on designated routes. Cross country motorized travel shall be prohibited. **B2-029** **B2-030**

j. Logging or precommercial thinning slash (i.e. materials less than 10 inches in diameter) accumulation on slopes less than 50 percent should not exceed an average depth of 14 inches: **B2-031**

1) for more than 20 percent of a project activity area (e.g. clearcut, precommercial thin or commercial thin).

2) for any area larger than 10 acres.

E. Range Management

1. Existing commercial livestock grazing may occur. See Forestwide Range Management Standards and Guidelines. **B2-032**

2. Corrals, loading chutes, watering troughs, salt blocks or other livestock attractants should not be located within areas with prescribed VQOs of foreground Retention unless they can be screened from the designated viewer positions. **B2-033**

F. Timber Management

1. Regulated timber harvest should occur. All vegetation management actions shall be directed toward creating or maintaining the desired landscape character through time and space. See Forestwide Timber Management Standards and Guidelines. **B2-034** **B2-035**

2. Timber salvage activities may occur. Down material and standing dead trees should be maintained in sufficient quantities to maintain a natural appearing condition. **B2-036** **B2-037**

3. A mix of naturally occuring species (i.e. conifer and deciduous trees and shrubs) should be maintained in harvest areas. **B2-038**

4. Even-age and uneven-age silvicultural systems may occur. See Forestwide Timber Management Standards and Guidelines regarding which silvicultural system should be emphasized in each visual management intensity. **B2-039**

5. When even-age silvicultural systems are applied, the average rotation age (i.e. stand age at regeneration harvest) on the average growing site should be at least: **B2-040**

   a. 250 years in foreground and middleground Retention.

   b. 200 years in foreground Partial Retention.

   c. 125 years in middleground Partial Retention.

6. Firewood cutting may be permitted for on-site recreation use. Personal use firewood cutting may occur only in designated areas. **B2-041** **B2-042**

G. Soil, Water and Air Quality

1. See Forestwide Soil Productivity, Water, Riparian Area and Air Quality Standards and Guidelines

2. Soil productivity and watershed improvement activities should be encouraged. **B2-043**

3. Snow plowing activities shall be consistent with riparian and aquatic habitat management direction. See Forestwide Riparian Area Standards and Guidelines regarding sediment and turbidity. **B2-044**

H. Minerals Management

1. Common variety minerals (e.g. sand and gravel) shall not be developed (i.e. quarries and stockpiles) within foreground Retention areas unless they can be screened from the viewer positions. **B2-045**

2. Geothermal activities and surface mining activities shall be discouraged in foreground Retention areas. **B2-046**

3. All mineral developments shall require a complete development and rehabilitation plan, including restoration and landscaping prior to development. **B2-047**

4. Existing mineral developments not achieving prescribed visual quality objectives shall be rehabilitated upon completion of resource extraction. **B2-048**

I. Geology

See Forestwide Geology Standards and Guidelines.

J. Lands and Special Uses

1. Utility corridors, towers and/or rights-of-way should not occur. If facilities are placed within scenic viewsheds, clearings and structures shall be designed and/or modified to blend with the natural landscape character. **B2-049** **B2-050**

2. Recreation and non-recreation special use permits may occur consistent with Management Area management direction. **B2-051**

3. Existing special uses, leases or permits inconsistent with Management Area management direction shall be terminated, modified or phased out. **B2-052**

K. Transportation Systems/Facilities; Travel and Access Management

1. Road construction, reconstruction and maintenance may occur. Road management objectives should be consistent with scenic quality and other resource objectives. **B2-053** **B2-054**

2. Road management, including all aspects of maintenance and snowplowing, should preserve or enhance scenic quality and maintain other resource values (see item G.3, above). **B2-055**

3. Vegetation management adjacent to major travel routes or recreation sites shall be consistent with the Northwest Region (R6) "Management Competing and Unwanted Vegetation" FEIS, Record of Decision (1988) and Mediated Agreement (1989). **B2-056**

4. Buildings and other road-associated structures shall be located and designed to blend with the natural landscape character. **B2-057**

5. Signing should be limited to the minimum quantity consistent with public service and safety, and should be located and designed to be compatible with the natural landscape character. **B2-058** **B2-059**

6. Recreational off-road vehicles (ORV) may be permitted only on designated routes. Areas may be closed or restricted to ORV use to meet prescribed VQOs or achieve other resource objectives. **B2-060** **B2-061**

7. All modes of unmotorized travel should be permitted. **B2-062**

L. Fire Prevention and Suppression

1. See Forestwide Forest Protection Standards and Guidelines.

2. Fire rehabilitation activities shall encourage re-establishment of native plant communities. **B2-063**

M. Wood Residue Management

1. See Forestwide Soil Productivity, Wildlife and Forest Diversity Standards and Guidelines regarding down woody debris.

2. Exceptions to down wood debris Standards and Guidelines may occur within near-foreground (i.e. 200 feet) areas with Retention and Partial Retention VQOs prescribed. Maintenance of natural appearing quantities and character of down woody debris shall be emphasized. **B2-064** **B2-065**

3. Prescribed fire may be permitted. Use of handpile fuel prescriptions should be emphasized in near-foreground areas; exceptions may occur for eastside pine communities. **B2-066** **B2-067** **B2-068**

N. Integrated Pest Management

1. Where insect or disease infestations pose a significant threat to landscape character, treatment actions should be taken to reduce or eliminate the short and long term impacts to scenic quality. Prevention of insect and disease spread to adjacent areas shall be considered. See Forestwide Timber Management Standards and Guidelines regarding Integrated Pest Management (IPM). **B2-069** **B2-070**

2. All IPM activities shall minimize impacts to scenic quality. **B2-071**

3. Insect and disease occurrances may result in deviation from desired VQOs. **B2-072**

B3 Roaded Recreation

Goal

Provide a variety of year-round recreation opportunities in natural appearing roaded settings. A secondary goal is to maintain a healthy forest condition through a variety of timber management practices.

Location

This Management Area is located in roaded, natural settings which offer outstanding views of majestic mountains. They are accessed by improved Forest roads and by trails.

B3 Management Areas are mapped as part of the preferred alternative (see Alternative Q in the accompaning map packet). Other Management Areas representing Management Requirements, e.g. B7 General Riparian Area (unmarked) and B5 Pileated Woodpecker/Pine Marten Habitat Area (see Wildlife Resources map, supplement to Alternative Q, in the map packet), are inclusions within or overlap some B3 Management boundaries. B7 and B5 Management Area prescriptions predominate, and apply to the corresponding inclusions and/or overlaps.

Desired Future Condition

Major Characteristics

- Landscape characterized by predominately natural-appearing environment next to roads; evidence of timber harvest in the background may be apparent.
- Dispersed motorized recreation activities such as motor camping, motorcycle use, mountain bicycling, boating, and snowmobiling occur.
- Evidence of dispersed recreation campsites.

Sensory Perceptions

- High degree of interaction with the natural environment.
- Sights, sounds, and smells associated with human activity are readily evident.
- Sense of freedom, independence, and relaxation.

B3 Roaded Recreation

A. Recreation Facilities, Use Administration, and Trails

1. All management activities shall meet Roaded Natural Recreation Opportunity Spectrum (ROS) criteria, or less developed settings. **B3-001**

2. Structures and improvements should be provided to protect resource values, for administrative purposes, and to accommodate recreational use. **B3-002**

3. Commonly used dispersed campsites may occur and should be located to take advantage of topographic and vegetative screening, and should be located outside of near-foreground view (i.e 100 feet) from lakes, streams, trails and key interest features. **B3-003** **B3-004** **B3-005**

4. Recreational livestock may be tied, grazed, or held for extended periods in the near-foreground (i.e. 100 feet) of campsites, trails and key interest areas. **B3-006**

    a. Utilization of current year's vegetation growth should not exceed 30 percent (see Forestwide Range Management Standards and Guidelines). **B3-007**

    b. No more than 5 percent of an activity area should be in a detrimental soil condition from the combined impact of compaction, puddling and displacement (see Forestwide Soil Productivity Standards and Guidelines). **B3-008**

    c. Exposed mineral soil around campsites, trails and key interest areas should not exceed 25 percent of the activity area. **B3-009**

5. The trail system should be developed and designed to disperse use, and provide a range of difficulty levels consistent with Management Area management direction. **B3-010**

6. Trails should be constructed and maintained consistent with the prescribed Roaded Natural ROS class. **B3-011**

7. Developed recreation facilities may be permitted. **B3-012**

B. Visual Resource Management

1. All management activities within the Management Area shall meet the visual quality objective (VQO) of Partial Retention, as seen from open roads, high recreational use areas, and water bodies (i.e. streams, lakes and reservoirs). **B3-013**

2. See Forestwide Visual Resource Management Standards and Guidelines regarding VQOs prescribed from trails.

3. Exceptions to the above VQOs may occur within "designated viewsheds" (see Forestwide Visual Resource Management Standards and Guidelines regarding designated viewshed VQOs). **B3-014**

a. Management activities within the B3 along Sherar Burn Road (Rd. 2613), from Veda Butte to Kinzel Lake (Zig Zag Ranger District), shall achieve a VQO of background Partial Retention as viewed from Timberline Lodge. B3-015

b. Management activities within the B3 west of Plaza Lake (Estacada Ranger District), along Road 4610, shall achieve a VQO of middle ground Retention as viewed from the Roaring River Wild and Scenic River corridor, i.e. the stream, streambanks and Forest trails. B3-016

c. Management activities within the Squirrel Creek B3 (Clackamas Ranger District), shall achieve VQOs of foreground Partial Retention and middle-ground Partial Retention, as viewed from the Clackamas River Wild and Scenic River corridor, i.e. the stream, streambanks, trails, and open roads. B3-017

C. Cultural Resources Management

See Forestwide Cultural Resources Management Standards and Guidelines.

D. Wildlife and Fisheries

Wildlife and fisheries habitat improvement activities may occur. B3-018

E. Range Management

Commercial livestock grazing should not be permitted. B3-019

F. Timber Management

1. Regulated timber harvest should occur; other forms of vegetative management may occur. See Forestwide Timber Management Standards and Guidelines. B3-020 B3-021
2. Uneven-age management should be considered and even-age management shall be considered for all timber harvest proposals. B3-022 B3-023
3. Timber salvage activities may occur. B3-024
4. Firewood cutting may be permitted for on-site recreation use if it does not detract from the natural appearance of the area or conflict with other recreational uses. Personal use firewood cutting may be allowed only in designated areas. B3-025 B3-026
5. Harvest activities should be timed to avoid conflicts with recreational activities on weekends and holidays. B3-027

G. Soil, Water and Air Quality

1. See Forestwide Soil Productivity, Water, Air Quality, and Riparian Area Standards and Guidelines.
2. Soil and watershed improvement activities shall be encouraged. B3-028

H. Minerals

1. See Forestwide Minerals Management Standards and Guidelines.
2. Development of common variety minerals (e.g. sand and gravel) should not be permitted within areas of concentrated recreational use (e.g. near campgrounds and trails). **B3-029**
3. Mineral exploration should be performed during seasons designated to reduce conflict with high recreational activity. **B3-030**
4. Facilities and excavations developed during mineral exploration and/or development should be designed to minimize site disturbance, and shall be rehabilitated immediately following project completion. **B3-031** **B3-032**

I. Geology

See Forestwide Geology Standards and Guidelines.

J. Lands and Special Uses

1. New recreation and non-recreation special uses may be permitted. **B3-033**
2. Existing special uses not consistent with Management Area direction should be terminated or phased out. **B3-034**

K. Transportation Systems/Facilities; Travel and Access Management

1. Road management objectives shall be consistent with the prescribed roaded natural ROS class. **B3-035**
2. Permanent roads, associated facilities and structures inconsistent with the roaded natural ROS setting shall not be permitted, except as provided by the 1872 Mining Law. **B3-036**
3. New roads, associated facilities and structures may occur. **B3-037**
4. Off-road vehicle use shall be encouraged on designated trails and/or areas. **B3-038**
5. Off-road vehicle use shall be prohibited within the B3 Management Areas at Indian Mountain (Hood River Ranger District) and along Sherar Burn Road 2613 (Zig Zag Ranger District). **B3-039**
6. Pedestrian, equestrian, and mountain bicycling shall be encouraged. **B3-040**

L. Fire Prevention and Suppression

See Forestwide Forest Protection Standards and Guidelines.

M. Wood Residue Treatment

1. See Forestwide Soil Productivity, Wildlife, and Forest Diversity Standards and Guidelines regarding down woody debris.
2. Prescribed fire may occur. **B3-041**

N. Integrated Pest Management

1. The suppression and prevention of pests shall be limited to outbreaks which threaten the recreation setting, timber values, and other resource values. **B3-042**
2. See Forestwide Timber Management Standards and Guidelines regarding Integrated Pest Management.

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B4 Pine-Oak Habitat

Goal

Maintain key deer and elk winter habitat with additional emphasis on nesting and forage production for year-round turkey and squirrel habitat. Secondary goals are to maintain a healthy forest condition through a variety of timber management practices and to provide summer dispersed and developed recreational opportunities.

Location

This Management Area is on the drier far eastern fringe of the Forest identified by areas of contiguous pine-oak vegetation on the drier, southerly exposures. The pine-oak communities are interspersed with contiguous blocks of mixed conifer forest on the more moist northerly exposures.

B4 Management Areas are mapped as part of the preferred alternative (see Alternative Q in the accompanying map packet). Other Management Areas representing Management Requirements, e.g. B7 General Riparian Area (unmapped) and B5 Pileated Woodpecker/Pine Marten Habitat Area (see Wildlife Resources map, supplement to Alternative Q, in the map packet), are inclusions within the B4 Management Area boundaries. B7 and B5 Management Area prescriptions predominate, and apply to the corresponding inclusions.

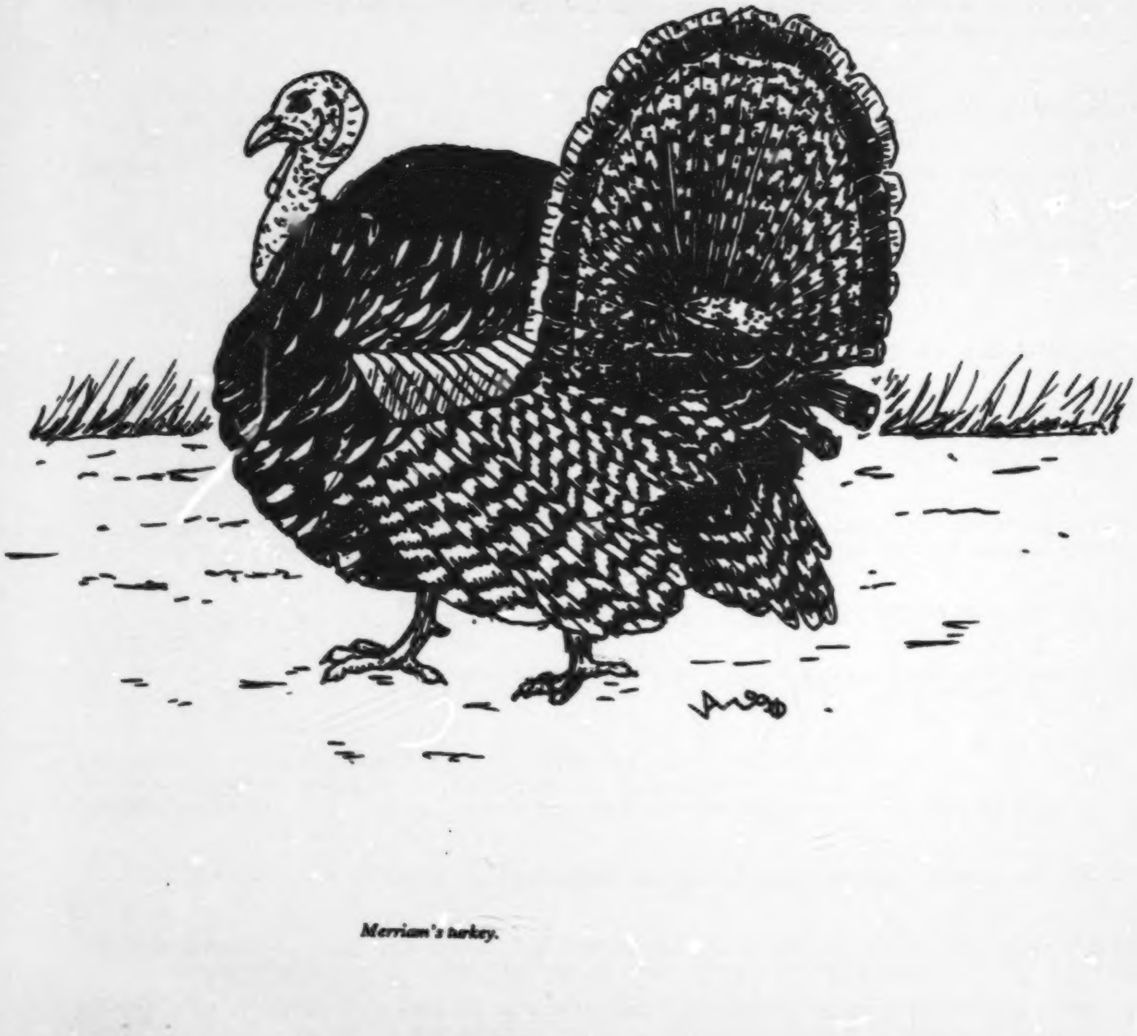
Desired Future Condition

Major Characteristics

- Area is dominated by scattered clumps of mature and older stands of trees.
- A mature tree is one which has slowed or stable growth, usually at least 12 inches in diameter and 80 years or older. The old growth trees are characterized by deeply furrowed bark and large branches, they are 70 feet or more in height.
- Numerous opportunities for high quality nesting and roosting habitat exists.
- Low interaction between humans and wildlife occurs during the winter season when animals are in a highly stressed condition.
- High quantity of nut and seed production.
- Dispersed summer motorized recreational opportunities are present through designed, managed and maintained trail systems.
- Strong contrast between south and north aspects.

Sensory Perceptions

- Presence of oak.
- Dry environment.
- Openness, parklike.
- Commanding long distance views.
- Bright sunlight on south aspects and subdued light on north aspects.



Merriam's turkey.

B4 Pine-Oak Habitat

Standards and Guidelines

A. Dispersed Recreation

1. Summer recreational use, e.g. wildlife viewing, should be encouraged. **B4-001**

2. Winter recreational use shall be discouraged. **B4-002**

3. Human access should be restricted, and may be excluded, between December 1 and April 1 to reduce human interaction with wintering wildlife. **B4-003**

B. Developed Recreation

1. New developed recreational facilities may be permitted. **B4-004**

2. Recreational use of developed facilities should be restricted between December 1 and April 1 to reduce human interaction with wintering wildlife. **B4-005**

C. Visual Resource Management

1. All management activities shall achieve a visual quality objective (VQO) of Modification in all distance zones, as viewed from open roads, high recreational use areas and water bodies (i.e. lakes, ponds, reservoirs and streams). **B4-006**

2. See Forestwide Visual Resource Manangement Standards and Guidelines regarding VQOs prescribed from trails.

D. Cultural Resources Management

See Forestwide Cultural Resources Management Standards and Guidelines.

E. Wildlife and Fisheries

1. Wildlife and fisheries habitat improvement activities shall be encouraged. **B4-007**

2. See Forestwide Wildlife and Fisheries Standards and Guidelines.

F. Range

1. Existing commercial livestock grazing may occur. Commercial livestock grazing (e.g. forage utilization) shall be managed to encourage winter wildlife forage production. **B4-008** **B4-009**

2. Commercial livestock grazing may be restricted or excluded after early summer to allow vegetation to regrow prior to the winter season. **B4-010**

3. Range management facilities (e.g. fences and watering troughs) should not preclude wildlife movements or access to habitat. **B4-011**

4. In situations where wildlife habitat and livestock grazing objectives cannot both be achieved, Allotment Management Plans shall be adjusted to assure wildlife objectives are achieved. **B4-012**

5. See Forestwide Range Management Forage Utilization Standards and Guidelines.

G. Timber Management

1. In areas where even-age silvicultural prescriptions are applied to coniferous stands, at least 1 acre of every 20 acres treated should have a greater than 70 percent canopy closure maintained at all times to provide for tree to tree movement of western gray squirrels. **B4-013**

2. For every 20 acres of coniferous forest, at least 1 clump (approximately 1/2 acre) of trees greater than or equal to 23 inches (diameter at breast height) shall be maintained. Clumps should consist of at least 6 trees. If 23 inch diameter trees are not present, the largest trees available should be retained. **B4-014** **B4-015** **B4-016**

3. Deer and elk forage and cover should be managed to achieve 30 percent forage and 70 percent cover (measured at the area analysis level, i.e. approximately 5000 acres). At least 50 percent of the area should consist of optimal or thermal cover; the remaining 20 percent may be hiding cover. At least 25 percent of the area should be optimal cover. **B4- 017** **B4- 018** **B4-019** **B4-020**

4. At least 80 percent of the forage component created in coniferous forest areas (i.e. regeneration and commercial thinning harvest areas) should provide nutritional forage enhancement for deer, elk and turkeys. Enhancement activities should include broadcast burning, seeding and planting of preferred forage species (e.g. birdsfoot trefoil, orchardgrass, and red-stem ceanothus), and periodic fertilization. **B4-021** **B4-022**

5. Commercial thinning harvest activities should be deferred if necessary to achieve cover Standards and Guidelines (item G.3). **B4-023**

6. Blocks of cover should be at least 600 feet wide and at least 30 acres in size. **B4-024**

7. Cover blocks should be located to maintain continuous travel ways of cover for wildlife. **B4-025**

8. In areas not capable of producing 50 percent optimal and thermal cover, mitigation measures should be applied, e.g. decreased road density and/or increased forage enhancement. **B4-026**

9. At least 30 percent of the natural shrub component should persist after site preparation. **B4-027**

10. Where even-age silviculture is applied, regeneration harvest units shall average 15 acres or less in size (as measured acres the Management Area). Harvest units should not exceed 20 acres in size. **B4-028** **B4-029**

11. At least 5 mature ponderosa pine trees per acre should be maintained. **B4-030**

12. Where oak trees are present, clumps of mature, high acorn producing trees should be maintained. Clumps should be at least one half acre in size. At least 1 clump per 10 acres should be maintained. **B4-031** **B4-032** **B4-033**

13. Fertilization should be considered to achieve the above Standards and Guidelines, i.e. cover and forage enhancement, tree size, acorn production, and shrub development. **B4-034**

14. Wildlife trees shall be maintained to provide habitat sufficient to support at least 90 percent of the maximum biological potential of primary cavity dependent species, e.g. woodpeckers. **B4-035**

15. Firewood gathering should not be permitted between December 1 and April 1. Firewood gathering for commercial and personal use may only be allowed in conjunction with timber management activities or in designated areas. **B4-036** **B4-037**

16. Timber harvest operations should be restricted, and may be excluded, between December 1 and April 1 to minimize interactions between humans and wintering wildlife. **B4-038** **B4-039**

H. Soil, Water, and Air Quality

See Forestwide Soil Productivity, Water, Air Quality and Riparian Area Standards and Guidelines.

I. Minerals Management

1. See Forestwide Minerals Management Standards and Guidelines.

2. Minerals exploration and development operating plans should limit activity between December 1 and April 1. **B4-040**

J. Geology

See Forestwide Geology Standards and Guidelines.

K. Lands and Special Uses

1. Activities associated with permits, leases, rights-of-way, and easements should be restricted between December 1 and April 1, except for maintenance and repair. **B4-041**

2. Pine-oak habitat lands should be retained. See Forestwide Lands Program Standards and Guidelines. **B4-042**

L. Transportation Systems/Facilities; Travel and Access Management

1. Open road density between December 1 and April 1 should not exceed 2.0 miles of road per square mile. **B4-043**

2. Roads should be closed to limit human activites and encourage wildlife access to key habitat areas, e.g. wetlands, turkey brooding areas, and high acorn producing areas. **B4-044**

3. Recreational access corridors should be provided to higher elevation snow zones for winter recreational opportunities. **B4-045**

4. Road management objectives shall be consistent with Pine-Oak Habitat Management Area direction. New roads shall minimize site disturbance, e.g. rights-of-way width and importation of road surface and subsurface materials. **B4-046** **B4-047**

5. Motorized vehicle use shall occur only on designated travel routes. Cross country motorized travel shall be prohibited. **B4-048** **B4-049**

M. Fire Prevention and Suppression

See Forestwide Forest Protection Standards and Guidelines.

N. Wood Residue Management

1. See Forestwide Soil Productivity, Wildlife and Forest Diversity Standards and Guidelines regarding large woody debris.
2. Areas of accumulated logging slash should be retained as nesting cover for turkeys. At least two 1-acre blocks of logging slash should be retained for every 10 acres of commercial thinning. **B4-050** **B4-051**

3. Prescribed fire may be applied to achieve wildlife habitat enhancement objectives. **B4-052**

O. Integrated Pest Management

1. Suppression and prevention of pests shall be limited to outbreaks that threaten wildlife habitat values. See Forestwide Timber Management Standards and Guidelines regarding Integrated Pest Management. **B4-053**

B5 Pileated Woodpecker/Pine Marten Habitat Area

Goal

Provide Forestwide mature or old growth forest habitat blocks of sufficient quality, quantity and distribution to sustain viable populations of pileated woodpecker and pine marten. A secondary goal is to maintain a healthy forest condition through a variety of timber management practices.

Location:

This Management Area is distributed across the Forest in a grid pattern. The larger Pileated Woodpecker B5 Management Areas (at least 600 acres) are distributed on a 5 mile average spacing, measured center to center. Pine Marten B5 Management Areas (at least 320 acres) are spaced on a 2 mile center to center network.

B5 Management Areas are mapped as part of the preferred Alternative Q, but are not indicated on the Alternative Q map. They are, however, mapped on the Wildlife Resources map, supplement to Alternative Q, enclosed in the accompanying map packet. B5 areas are inclusions within other Management Areas, in some cases the Management Area prescriptions are jointly applied to the overlap area; and in other cases the B5 prescription is either dominant or subservient. Management Area prescriptions A2, A3, A8, A9 and A13 predominate over the B5 prescription. A4, A5, A6, A7, A11, A12 and B7 prescriptions are applied jointly with the B5 prescription. The B5 prescription, with the exception of visual quality objectives, predominates over B1, B2, B3, B4, B6, B8, B9, B10, B11 and B12 prescriptions.

Desired Future Condition

Major Characteristics

- Predominant stand condition is mature and over-mature forest.
- Pileated woodpecker Management Areas provide at least 300 acres of contiguous habitat within a 600 acre managed area.
- Pine marten Management Areas provide at least 160 acres of contiguous habitat within a 320 acre managed area.
- High density of high quality den and nest snags and defective green trees.
- Prevelance of dead and down woody material.
- Limited recreational access and motorized vehicle traffic encouraged to use designated routes.
- Healthy, older forest with a mid-level canopy reaching maturity.

Sensory Perceptions

- Placid/serene environment.
- Core canopy will be closed with diffused lighting.
- Predominate sense of a forested environment.
- Cooler and sheltered micro climate.
- Limited sight distance, a closed in feeling.

B5 Pileated Woodpecker/Pine Marten Habitat Area

The following Standards and Guidelines apply to both Pileated Woodpecker Habitat Areas and Pine Marten Habitat Areas. See the Wildlife Resources (Supplement to Alternative Q) map accompanying this document for Management Area locations.

A. Dispersed Recreation

1. Off-road motorized vehicle use should not be permitted except on designated trails. All areas and trails closed to off-road vehicle use shall be posted. **B5-001 B5-002**
2. Existing trails should be maintained and recreational use allowed,'if consistent with Management Area management direction. **B5-003**
3. Dispersed camping should be discouraged. **B5-004**

B. Developed Recreation

Developed recreation sites should not be permitted. **B5-005**

C. Visual Resource Management

1. Management activities shall achieve a visual quality objective (VQO) of Modification from open roads. **B5-006**
2. VQOs accepting less visual quality disturbances shall be applied when B5 Management Areas are located within "designated viewsheds." See Forestwide Visual Resources Management Standards and Guidelines regarding designated viewsheds. **B5-007**
3. See Forestwide Visual Resource Management Standards and Guidelines for VQOs prescribed for trails.

D. Cultural Resources Management

See Forestwide Cultural Resources Management Standards and Guidelines.

E. Wildlife

1. Within Pileated Woodpecker Habitat Areas:
    a. At least 300 acres of mature and/or old growth forest habitat shall be maintained within each 600 acre Management Area. **B5-008**
    b. Each 300 acres of mature and/or old growth habitat should be contiguous. **B5-009**

2. Within Pine Marten Habitat Areas:

   a. At least 160 acres of mature and/or old growth forest habitat shall be maintained within each 320 acre Management Area. **B5-010**

   b. Each 160 acres of mature and/or old growth habitat should be contiguous. **B5-011**

3. Habitat improvement projects for mature and old growth habitat associated species shall be encouraged. Habitat improvement projects for other wildlife species may occur if consistent with Management Area management direction. **B5-012** **B5-013**

F. Fisheries

Fisheries and riparian habitat improvement projects may occur. **B5-014**

G. Range Management

1. Existing commercial livestock grazing may occur (see Forestwide Range Management Standards and Guidelines). **B5-015**

2. Livestock salt blocks and watering troughs should not be permitted. **B5-016**

3. Livestock holding facilities (e.g. corrals and loading chutes) shall not be permitted. **B5-017**

H. Timber Management

1. Regulated timber harvest should occur where B5 Management Areas are inclusions within B and C Category Management Areas. See Preferred Alternative Q and Wildlife Resources maps. **B5-018**

2. Salvage harvest of down trees and firewood gathering may occur if sufficient quantity and quality of down woody material is retained (see Forestwide Wildlife, Soil Productivity, and Forest Diversity Standards and Guidelines). **B5-019**

3. Commercial thinning may occur within the non-mature/old growth habitat component, i.e. stands less than 100 years of age. Crown closure within the forest canopy shall be at least 50 percent within commercial thinning activity areas. **B5-020** **B5-021**

4. Genetic tree improvement activities should be limited to select trees within the mature and/or old growth forest habitat. Limbing and basal clearing should be discouraged. **B5-022** **B5-023**

I. Soil, Water, and Air Quality

Rehabilitation and enhancement projects may occur. **B5-024**

J. Minerals Management

1. Mineral exploration and development may occur (see Forestwide Minerals Management Standards and Guidelines). Habitat alteration should be minimized. B5-025 B5-026

2. Common variety minerals (e.g. sand and gravel) should not be developed. B5-027

K. Geology

See Forestwide Geology Standards and Guidelines.

L. Lands and Special Uses

1. Management Area lands shall be retained. See Forestwide Lands Program Standards and Guidelines regarding land exchanges. B5-028

2. New utility rights-of-way shall not be permitted. B5-029

3. Recreation and non-recreation special uses, permits, leases, rights-of-way and easements shall be discouraged. Existing special uses not consistent with Management Area management direction should be terminated. B5-030 B5-031

M. Transportation Systems/Facilities; Travel and Access Management.

1. Open road density shall not exceed 2.0 miles per square mile. B5-032

2. Dispersed recreation facilities (e.g. trailheads and stock corrals) and dispersed camping sites should not be encouraged. B5-033

3. Recreational off-road motorized vehicles should not be permitted except on designated trails. B5-034

4. Pedestrian and equestrian use should not be encouraged. Off-trail travel should be discouraged. B5-035

N. Fire Prevention and Suppression

1. See Forestwide Forest Protection Standards and Guidelines.

2. See Forestwide Forest Protection, Initial Attack Standards and Guidelines (item D.4) regarding Resource Advisors.

O. Wood Residue Management

1. Coarse Woody Debris. See Forestwide Wildlife Standards and Guidelines.

   a. At least 45 snags greater than 20 inches diameter shall be maintained within the 300 acres of mature and/or old growth pileated woodpecker habitat (Thomas 1979). B5-036

b. At least 24 snags greater than 20 inches diameter shall be maintained within the 160 acres of mature and/or old growth pine marten habitat. **B5-037**

c. At least 6 down logs per acre shall be maintained (Burke 1982). Logs shall be at least 20 inches in diameter (small end) and 20 feet in length. **B5-038** **B5-039**

2. Prescribed fire may occur to achieve mature and/or old growth habitat objectives. **B5-040**

P. Integrated Pest Management

1. Herbicide application should not be permitted outside of road rights-of-way.. **B5-041**

2. If insect epidemics threaten mature and/or old growth habitat quality, biological control measures should be considered. See Forestwide Timber Management Standards and Guidelines regarding Integrated Pest Management. **B5-042**

B6 Special Emphasis Watershed

Cold Springs Creek

Goal

Maintain or improve watershed, riparian, and aquatic habitat conditions and water quality for municipal uses and/or long term fish production. A secondary goal is to maintain a healthy forest condition through a variety of timber management practice.

Location

This designation applies to select watersheds where there is an unusually high combination of riparian resource values and high inherent sensitivity to disturbance. This designation also applies to several watersheds exhibiting degraded watershed conditions, related to sensitivity factors such as land instability, soil erosion, and channel instability.

B6 Management Areas are mapped as part of the preferred alternative (see Alternative Q in the accompanying map packet). B6 Management Areas typically do not encompass the entire watershed they are intended to protect, due to overlap by other Management Areas (i.e. A2, A3, A4, A5, A7, A8, A9, A11, B2, B8 and B12). Prescriptions for these Management Areas predominate over the B6 prescription; however, Forestwide watershed impact Standards and Guidelines (see Forestwide Water Standards and Guidelines) apply to the entire drainages (Map Four-3).

Other Management Areas representing Management Requirements, e.g. B7 General Riparian Area (unmapped) and B5 Pileated Woodpecker/Pine Marten Habitat Area (see Wildlife Resources map, supplement to Alternative Q, in the map packet), are inclusions within or overlap some B6 Management Area boundaries. B7 and B5 Management Area prescriptions predominate, and apply to the corresponding inclusions and overlaps.

Desired Future Condition

Major Characteristics

- Depending on the inherent sensitivity of each special emphasis watershed, no more than 25 percent of the watershed area will be in a hydrologically disturbed condition at any time.
- Extensive stands of trees at various stages of development, arranged in a mosaic pattern, influenced by drainage patterns, geology, soils, and avoidance of sensitive watershed lands are prevalent.
- Riparian areas approximate natural conditions.
- Transportation system design may be restricted to avoid sensitive watershed lands.
- Some roads or trails may be closed part of the year or for several years at a time.
- Wide variety of gentle to steep mountainous terrain.
- Clear, cold mountain streams are common throughout the area.
- Rock outcrops may be prevalent in many areas.
- Some small ponds and wet areas may be present.
- Evidence of land instability may be present.

Sensory Perceptions

- Vegetation pattern reminiscent of a giant patchwork quilt, though perhaps more irregular; almost natural appearing.
- Sights, sounds, and smells associated with human activity will be evident, though to a lesser degree than in other intensely managed areas.
- Many outstanding views of surrounding landscapes.
- Presence of a large variety of wildlife.

B6 Special Emphasis Watersheds

Standards and Guidelines

A. Dispersed Recreation and Developed Recreation

1. New developed recreation sites, or expansions to existing sites, may occur provided **B6-001**
watershed (i.e. water, soil, and fish) values are protected. Developed sites shall not be **B6-002**
permitted in The Dalles Watershed (South Fork Mill Creek and Upper Dog River).

2. The development of new or expansion of existing recreation sites facilities and trails **B6-003**
(hiking and cross-country skiing) may occur, but should avoid or protect sensitive **B6-004**
watershed lands. These sites, facilities and trails shall not be permitted in The Dalles **B6-005**
Watershed.

3. Developments or expansions should avoid special aquatic and terrestrial habitats (e.g. **B6-006**
side channels, ponds, and wetlands). Interpretive facilities and trails may be an **B6-007**
exception.

4. Where existing developments (e.g. recreation sites, and trails) are not consistent with **B6-008**
riparian and/or watershed values, modification or rehabilitation of the site or facility
should occur.

5. Dispersed recreation and natural resource management interpretation should be **B6-009**
encouraged, except within The Dalles Watershed.

B. Visual Resource Management

1. Management activities shall achieve a visual quality objective (VQO) of modification **B6-010**
from open roads.

2. VQOs accepting less visual quality disturbance shall be applied when B6 Management **B6-011**
Areas are located within "designated viewsheds". See Forestwide Visual Resource
Management Standards and Guidelines regarding designated viewsheds.

3. See Forestwide Visual Resource Management Standards and Guidelines for VQOs prescribed for trails.

C. Cultural Resources Management

1. See Forestwide Cultural Resources Management Standards and Guidelines.

2. Authorized excavation of cultural resource sites shall be conducted in a manner which **B6-012**
minimizes impacts on watershed values. Ground and vegetation disturbance associated **B6-013**
with site excavation should be rehabilitated immediately following completion of
activities.

D. Wildlife and Fisheries

Wildlife and fisheries rehabilitation and enhancement projects should be permitted. Projects shall emphasize improvement or rehabilitation of key and/or sensitive wildlife and fisheries habitat. **B6-014** **B6-015**

E. Range Management

1. Existing commercial livestock grazing may occur. See Forestwide Range Management Standards and Guidelines. **B6-016**

2. Range management or improvement projects should include provisions and/or mitigating measures to prevent degradation of watershed values. **B6-017**

F. Timber Management

1. Regulated timber harvest should occur. Scheduling of timber harvest activities shall be consistent with accomplishment of riparian management objectives with consideration for hydrologic recovery. Watershed impact areas should not exceed "thresholds of concern" (TOC) calculated for each of the special emphasis watersheds (Table Four-31). **B6-018** **B6-019** **B6-020**

Table Four-31 Special Emphasis Watershed Thresholds of Concern

Watershed	TOC (percent)
Alder Creek (City of Sandy Watershed)	25
Blister Creek	18
Clear Branch Hood River	18
Collawash River, Upper	18
Dog River, Upper (City of The Dalles Watershed)	25
Eagle Creek (Federal Fish Hatchery)	25
Eagle Creek S. Fork (Federal Fish Hatchery)	25
Eightmile Creek	25
Fifteenmile Creek (City of Dufur Watershed)	25
Fish Creek	18
Fivemile Creek	25
Gordon Creek (City of Corbett Watershed)	18
Hot Springs Fork Tributaries (Collawash River)	18
Lake Branch Hood River	18
Mill Creek (City of The Dalles Watershed)	25
Pansey Creek	18
Ramsey Creek	25
Still Creek	25

2. TOC should be calculated for the entire watershed (Map Four-3) represented by the B6 Management Area (see Forestwide Water Standards and Guidelines). **B6-021**

3. Biological and manual methods of vegetation management should be favored in domestic use watersheds. **B6-022**

4. Uneven-age management should be considered and even-age management shall be considered for all timber harvest proposals. See Forestwide Timber Management Standards and Guidelines regarding application of even-age and uneven-age management. **B6-023** **B6-024**

5. Firewood cutting should be allowed only in specifically designated areas. **B6-025**

6. Activities involving fertilization or chemical treatment of vegetation, in municipal or domestic watersheds shall be coordinated with appropriate municipalities or individuals. **B6-026**

7. Timber salvage activities may occur. **B6-027**

G. Soil, Water and Air Quality

1. See Forestwide Soil Productivity, Water, Riparian Area, and Air Quality Standards and Guidelines.

2. Site-specific riparian management objectives shall be developed for each special emphasis watershed. **B6-028**

H. Minerals Management

Minerals exploration and development may occur. See Forestwide Minerals Management Standards and Guidelines. **B6-029**

I. Geology

See Forestwide Geology Standards and Guidelines.

J. Lands and Special Uses

See Forestwide Lands Program and Special Uses Standards and Guidelines.

K. Transportation Systems/Facilities; Travel and Access Management

1. Roads and associated facilities should be permitted, when consistent with protection of watershed values, specifically thresholds of concern (Table Four-31). **B6-030**

2. Road crossings of fish-bearing streams shall be designed to provide for adult and juvenile fish passage. **B6-031**

3. Drainage systems for roads or parking areas should incorporate practical features to minimize or eliminate sediment and/or other pollutants from discharging directly into water bodies (i.e. streams, lakes, ponds, reservoirs, and wetlands). **B6-032**

4. Public access control shall be utilized within The Dalles Watershed as necessary to meet water quality management objectives. Access control may be used in other watersheds to protect water quality. **B6-033** **B6-034**

5. Over-snow off-road vehicle use may be permitted. **B6-035**

6. Recreational off-road vehicle use (other than over-snow) shall be discouraged. Recreational off-road vehicle use shall be prohibited in Still Creek and The Dalles Watershed Management Unit. **B6-036** **B6-037**

7. Dispersed recreation activities should be encouraged. **B6-038**

8. Developed recreation facilities may occur. **B6-039**

L. Fire Prevention and Suppression

See Forestwide Forest Protection Standards and Guidelines.

M. Wood Residue Management

1. See Forestwide Soil Productivity, Wildlife and Forest Diversity Standards and Guidelines.

2. Prescribed burning may be permitted to enhance watershed resistance to catastrophic wildfire. **B6-040**

N. Integrated Pest Management

1. Biological control measures should be favored. See Forestwide Timber Management Standards and Guidelines regarding integrated pest management. **B6-041**

2. Activities involving pesticide application in municipal or domestic watersheds shall be coordinated with associated municipalities, groups or individuals. **B6-042**

B7 General Riparian Area

CCC crew rip-rapping a stream.

Goal

Achieve and maintain riparian and aquatic habitat conditions for the sustained, long-term production of fish, selected wildlife and plant species, and high quality water for the full spectrum of the Forest's riparian and aquatic areas. A secondary goal is to maintain a healthy forest condition through a variety of timber management practices.

Location

This designation includes riparian and aquatic ecosystems and the upland transition zones of varying width. Slopes range from gentle to very steep; nearly flat to deeply incised. Areas include those associated with streams, lakes, reservoirs, wetlands, seeps, and springs.

B7 Management Areas are not mapped as part of preferred Alternative Q. They do, however, represent a Management Requirement (FEIS Appendix F) and are inclusions within all other Management Areas (excluding Bull Run and Columbia River Gorge National Scenic Area) except A9 Key Site Riparian. A2 and A3 prescriptions predominate over B7 prescriptions. Other A category management prescriptions (i.e. A4, A5, A6, A7, A8, A10, A11, A12 and A13) are jointly applied with B7 prescriptions to riparian area inclusions. B7 prescriptions are also jointly applied to riparian area inclusions within B1 and B12. B7 predominates over B2, B3, B4, B5, B6, B8, B9, B10 and B11 for riparian inclusions.

Desired Future Condition

Major Characteristics

- Provide consistently excellent water quality (i.e. clarity, temperature, and chemical
- Supports a wide variety of fish populations (i.e. species and stocks), well-adapted to local conditions.
- Populations of fish and riparian-dependent organisms are consistent with the inherent productive capacity of the habitat.
- Riparian and aquatic habitat conditions are relatively stable and resilient.
- Disturbance (e.g. fires, windthrown trees and channel scouring) is localized and generally infrequent.
- Actual location of Management Area boundaries will depend on local site conditions which are evaluated during project planning activities.
- Evidence of human activities may be present, but is subordinate to other characteristics.
- Water quality consitently meets or exceeds requirements of downstream beneficial uses.
- The sediment budget of streams is well within the range and frequency adapted to by native aquatic species.
- Summer stream temperatures are well-moderated with limited day to night variation.
- Generally cool summer water temperatures are well within the tolerances of native aquatic organisms indigenous to the systems.
- Natural channel forming/stability processes are maintained at or restored to inherent (historic) conditions.
- For Class I, II, and III steams, relatively large pools, persistent during lowest flows, are frequent and well-distributed.
- Frequent and well distributed complexes of large wood (long and large diameter) interact to create stability and diversity of acuatic habitat types.
- Riparian areas are fully occupied by historic plant community types.
- Dynamic, multi-age communities promote floodplain, bank, and channel stability, provide resiliency to disturbance, and promote aquatic diversity.
- Riparian areas provide detention storage of water during flood events and sustain critical summer base flows.
- Riparian areas are sites for storage of large woody debris and entrapment of sediment.
- Slopes range from gentle to very steep, nearly flat to deeply incised.

- Multi-layered canopy including large tall green trees, dead snags, intermediate size trees and understory vegetation.
- Frequent small openings in canopy, favor a variety of species and successional stages.
- Fallen, decayed trees and accumulation of litter and large organic material.

Sensory Perceptions

- Shaded, indirect lighting with hues of green are dominant during the growing season.
- In summer, cooler and more humid than surrounding upslope areas.
- Sounds associated with flowing water, birds, and wildlife predominate.
- Sights, sounds, and smells associated with human activity are subordinate.

B7 General Riparian Area

The following Management Area Standards and Guidelines, organized by resource area, are complimented by the Forestwide Riparian Area Standards and Guidelines. The Forestwides provide riparian protection and maintenance direction by riparian area type, e.g. stream class, lake perimeter and wetland.

A. Dispersed Recreation and Developed Recreation

1. The development of new, or expansion of existing, recreation sites, facilities, and trails (i.e. hiking and cross-country skiing) may occur and should be located to protect riparian values. B7-001 B7-002

2. Trails and recreation sites should avoid special aquatic and terrestrial habitats (e.g. side channels, ponds, and wetlands). Interpretive and barrier-free facilities may be an exception. B7-003 B7-004

3. Dispersed campsites should be discouraged within 100 feet of lake shores. B7-005

4. Where existing developments (e.g. recreation sites and trails) are not consistent with riparian values, modification, rehabilitation, or removal of the site or facility should occur. B7-006

5. Management of lakes shall be coordinated with Oregon Department of Fish & Wildlife (ODFW) fisheries management objectives. B7-007

6. Whenever damage occurs to riparian resources, the damaged site shall be promptly restored. Rehabilitation and enhancement may be accomplished through revegetation and stabilization. B7-008 B7-009

7. Off-road vehicle stream crossings shall be specifically identified and should be equipped with bridges, culverts, or other effective measures to guard against bank/shoreline damage and water quality degradation. B7-010

8. Recreational livestock may enter riparian areas for water, but should not be held for extended periods of time, (e.g. no grazing or overnight holding). B7-011 B7-012

B. Visual Resource Management

1. Management activities shall achieve a visual quality objective (VQO) of at least foreground Partial Retention and middleground Modification as viewed from the stream and streambank, except in A11 where a VQO of Partial Retention should be met from the foreground and middleground as viewed from the stream and streambank. See Forestwide Visual Resource Management Standards and Guidelines. B7-013

2. VQOs accepting less visual quality disturbance shall be applied when B7 Management Areas are located within "designated viewsheds". See Forestwide Visual Resource Management Standards and Guidelines regarding designated viewsheds. B7-014

3. See Forestwide Visual Resource Management Standards and Guidelines for VQOs prescribed for trails.

C. Cultural Resources Management

1. See Forestwide Cultural Resources Management Standards and Guidelines.

2. Authorized excavation of cultural resource sites may occur, but shall be conducted in a manner which minimizes impact on riparian areas. Ground and vegetative disturbance associated with site excavation shall be rehabilitated immediately following completion of activities. **B7-015 B7-016 B7-017**

D. Wildlife, Botany, and Fisheries

1. Wildlife, botanical and fisheries rehabilitation and enhancement projects should be permitted. Projects within riparian areas shall emphasize improvement or rehabilitation of key and/or sensitive wildlife, plant and fish habitat. **B7-018 B7-019**

2. Riparian management should emphasize maintaining the habitat of wild or naturally self-sustaining stocks of anadromous and resident trout species. **B7-020**

3. Within streams where water-oriented recreation (e.g. kayaking, canoeing, and whitewater rafting) occurs, the design and placement of in-stream fish and wildlife habitat enhancement structures should be compatible with the recreational use of the streams. Structures shall not create unusually hazardous conditions. **B7-021 B7-022**

E. Range Management

1. Existing commercial livestock grazing may occur. See Forestwide Range Management Standards and Guidelines regarding riparian forage utilization. **B7-023**

2. Range management and/or improvement activities (e.g. structural facilities) shall be designed to not concentrate livestock in riparian areas. Livestock salt blocks, watering troughs, corrals and loading chutes shall not be permitted. **B7-024 B7-025**

3. Riparian communities which have sustained substantial impacts (e.g. degraded streambanks and severe soil compaction) due to heavy livestock use, shall be rehabilitated. Livestock access may be precluded. **B7-026 B7-027**

F. Timber Management

1. Regulated timber harvest should occur within B7 inclusions within category B and C Management Areas. Regulated timber harvest shall be prohibited within B7 inclusions within category A Management Areas. **B7-028 B7-029**

2. Precommercial thinning may occur. A tree species mix adapted to the specific riparian area shall be maintained or restored. Hardwoods should be encouraged. **B7-030 B7-031 B7-032**

3. Both uneven-age management and even-age management should considered for all timber harvest proposals. **B7-033**

4. General Riparian Area Management Areas shall be delineated and evaluated as part of area analyses and project planning. B7-034

5. Cutting of firewood within stream channels shall be prohibited. B7-035

6. Firewood cutting outside of stream channels may occur only at specifically designated sites. B7-036

7. Landings or skid trails should not be located in stream channels, including dry ephemeral draws. Perpendicular road crossings may be permitted and rehabilitation shall be required. B7-037 B7-038

8. Timber salvage activities may occur. B7-039

G. Soil, Water, and Air Quality

1. See Forestwide Soil Productivity, Water, Air Quality and Riparian Area Standards and Guidelines.

2. Soil and Watershed improvement activities shall be encouraged. B7-040

H. Minerals Management

1. Minerals exploraton and development may occur. See Forestwide Minerals Management Standards and Guidelines. Riparian impacts shall be minimized. B7-041 B7-042

2. Common variety minerals (e.g. sand and gravel) development shall be discouraged. B7-043

I. Geology

See Forestwide Geology Standards and Guidelines.

J. Lands and Special Uses

1. Special Uses which do not meet Management Area management direction shall be modified or terminated. B7-044

2. Rights-of-way and easements should not be permitted. B7-045

3. Minimum instream flow requirements shall be determined and implemented for all small hydroelectric development projects or other proposed diversions of water on National Forest System lands. B7-046

4. Riparian values shall be considered in proposals for land ownership adjustments. Lands adjacent to major watercourses should be retained. B7-047 B7-048

5. Irrigation water, under special use permit, routed through natural riparian areas should not degrade total riparian area values; i.e. the cummulative values of riparian dependent resources (as assessed throughout the riparian Management Area) should not be decreased. See Forestwide Riparian Area and Special Uses Standards and Guidelines. B7-049 B7-050

K. Transportation Systems/Facilities; Travel and Access Management

1. Roads and associated facilities should not occur. Designed stream crossings may occur. B7-051 B7-052

2. Road crossings of fish-bearing streams shall be designed to provide for adult and juvenile passage. B7-053

3. Drainage systems for roads should incorporate practical features to minimize or eliminate sediment and/or other pollutants from discharging directly into streams, lakes, wetlands, springs or seeps. B7-054

4. Stream crossing structures shall be designed to accommodate water discharges as calculated using the document, "Determining the Magnitude and Frequency of Floods on the Mt. Hood National Forest". B7-055

5. Rock, soil or organic material should not be sidecast in the construction or maintenance of roads or landings; exceptions may occur for designed road stream crossings. B7-056 B7-057

6. Existing roads causing impacts to riparian values should be mitigated or relocated. B7-058

7. Unneeded and/or abandoned roads should be rehabilitated (see also Forestwide Soil Productivity Standards and Guidelines). B7-059

8. Recreational off-road vehicle use shall be discouraged. B7-060

9. New trails should be located outside of wetlands and other special riparian, aquatic, and threatened/endangered species habitats. B7-061

10. Trails should cross riparian areas in the shortest distance possible, i.e. at right angles to the drainage. B7-062

11. The placement and anchoring of large woody debris in streams should be consistent with the hydrologic and hydraulic design considerations and management objectives of existing facilities or structures (e.g. bridges and culverts). New or replacement facilities should be designed to accommodate naturally occuring levels of large woody debris, including re-introduced materials. B7-063 B7-064

L. Fire Prevention and Suppression

1. See Forestwide Forest Protection Standards and Guidelines.

2. Tractor firelines should not be constructed. Perpendicular crossings may be permitted with subsequent rehabilitation. B7-065 B7-066

M. Wood Residue Treatment

1. Broadcast burning may be allowed where prescriptions are consistent with riparian management objectives. **B7-067**

2. See Forestwide Riparian Area Standards and Guidelines regarding large woody debris.

N. Integrated Pest Management

1. Suppression and prevention of pests should be limited to outbreaks which threaten riparian resource values. Biological control measures should be emphasized. **B7-068** **B7-069**

2. Application of herbicides shall be discouraged. **B7-070**

3. See Forestwide Timber Management Standards and Guidelines regarding Integrated Pest Management.

B8 Earthflow

Goal

Maintain hydrologic and physical balances to prevent reactivation or acceleration of large, slow moving earthflow areas. Allow for the management and utilization of forest resources through the use of special management practices.

Location

Earthflow Management Areas are located almost exclusively in the Clackamas River drainage. They vary in size from less than 100 acres to as large as 6 to 8 square miles.

B8 Management Areas are mapped as part of the preferred alternative (see Alternative Q in the accompanying packet). Other Management Areas representing Management Requirements, e.g. B7 General Riparian Area (unmapped) and B5 Pileated Woodpecker/Pine Marten Habitat Area (see Wildlife Resources map, supplement to Alternative Q, in the map packet), are inclusions within the B8 Management Area boundaries. B7 and B5 Management Area prescriptions, as well as the B8 prescription, jointly apply to the corresponding inclusions.

Desired Future Conditions

Major Characteristics

- Forest stands of varying age classes with a prevalence of stands with trees over 8 inches in diameter.
- Access via roads and trails.
- Several acres to square miles in size.
- Timber management and access designed to maintain long term stability of the area.
- Recreation facilities generally not present.
- Humocky topography.
- Dips and bumps in roads.
- Small cracks in the ground surface.
- Rolled over and buried surface material.
- Trees growing crooked.
- Trees lying flat or at various angles.
- Sag ponds and wet areas often present.

B8 Earthflow

Map Four-1 displays inventoried high, moderate and low risk earthflows. B8 Earthflow Management Areas correspond with inventoried high and moderate risk earthflows.

A. Dispersed Recreation

1. Dispersed recreation activities may occur. See Forestwide Dispersed Recreation Standards and Guidelines. **B8-001**

2. Camping sites and trails should not be planned or constructed across the scarp or toe of high risk earthflows. **B8-002**

3. Created openings for recreational activities shall not exceed 10 acres and 20 acres on high and moderate risk earthflows, respectively. **B8-003**

B. Developed Recreation

1. Development projects shall be designed so that earthflow movement shall not be reactivated or accelerated. **B8-004**

2. Campgrounds and trailheads should not be planned and/or constructed across the toe or scarp of an earthflow. **B8-005**

C. Visual Resource Management

1. Management activities shall achieve a visual quality objective (VQO) of Modification as viewed from open roads. VQOs accepting less visual quality disturbance shall be applied when B8 Management Areas are located within "designated viewsheds". See Forestwide Visual Resource Managment Standards and Guidelines regarding designated viewsheds. **B8-006** **B8-007**

2. See Forestwide Visual Resource Management Standards and Guidelines for VQOs prescribed for trails.

D. Cultural Resources Management

1. Cultural resources management activities (e.g. site excavation) shall not be allowed to reactivate or accelerate earthflow movement. **B8-008**

2. See Forestwide Cultural Resources Management Standards and Guidelines.

E. Wildlife and Fisheries

1. Wildlife and fisheries habitat improvement projects should be encouraged, and shall be designed so that earthflow movement is not reactivated or accelerated. B8-009 B8-010

2. Created openings for wildlife habitat improvement activites shall not exceed 10 acres and 20 acres on high risk and moderate risk earthflows, respectively. B8-011

3. Deer and elk winter range habitat values shall be maintained within two B8 Earthflows on the Clackamas Ranger District (see Map Four-4 and Alternative Q map): B8-012

   ☐ Ripplebrook-Timberlake area earthflow, i.e. including the Oak Grove Fork of the Clackamas River downstream from Lake Harriet, Sam Creek, Battle Creek, John Creek, Silver Tip and Oak Grove vicinities, Bull Creek, Frog Lake, Surprise Lake, Tag Creek and Tar Creek.

   ☐ Earthflow including Slide Creek, Sluice Creek, Cap Creek and the area east-northeast of Austin Point.

   a. Human access should be restricted between December 1 and April 1 to reduce interaction with wintering deer and elk. B8-013

   b. At least 50 percent of the area should be maintained as optimal or thermal cover. At least 25 percent should be optimal cover. B8-014 B8-015

   c. At least 75 percent of all regeneration and commercial thinning timber harvest units should provide nutritional forage enhancement for deer and elk. Examples of forage enhancement include: B8-016

      1) Seeding or planting with high quality forage species, e.g. white clover, subterranian clover, orchard grass, red-osier dogwood and red-stem ceanothus.

      2) Prescribed fire, e.t. broadcast burning.

      3) Fertilizing.

   d. Blocks of cover should be at least 600 feet wide and at least 30 acres in size. B8-017

   e. Timber harvest operations should be restricted, and may be excluded between December 1 and April 1. B8-018 B8-019

   f. Mineral development should not occur between December 1 and April 1. B8-020

   g. Open road density between December 1 and April 1 shall not exceed 1.5 miles of road per square mile. B8-021

   h. Motorized vehicle use shall occur only on designated routes. Recreational cross country motorized travel shall be prohibited. B8-022 B8-023

   i. Logging or precommercial thinning slash (i.e. materials less than 10 inches in diameter) accumulation on slopes less than 50 percent should not exceed an average depth of 14 inches: B8-024

      1) for more than 20 percent of a project activity area (e.g. clearcut, precommercial thin or commercial thin).

2) for any area larger than 10 acres.

F. Range Management

1. Existing commercial livestock grazing may occur. See Forestwide Range Management Standards and Guidelines. B8-025

2. Range improvement projects shall be designed so that earthflow movement is not reactivated or accelerated. B8-026

3. Created openings for range improvement shall not exceed 10 acres and 20 acres on high risk and moderate risk earthflows, respectively. B8-027

G. Timber Management

1. Regulated timber harvest should occur. B8-028

2. Created openings for silvicultural purposes on earthflows shall not exceed 10 acres in size in high risk areas and 20 acres in moderate risk areas. Exceptions may occur in case of catastrophic events (e.g. windthrow and fire) when trees are no longer providing an evapotranspiration benefit in stabilizing earthflows. B8-029 B8-030

3. On each high risk earthflow, at least 90 percent of the acreage capable of supporting conifer forests should have timber stands: B8-031
    a. with at least 40 percent of the crop trees at least 8 inches in diameter at breast height (DBH), and
    b. with at least 70 percent crown closure.

4. On each moderate risk earthflow, at least 75 percent of the acreage capable of supporting conifer forests should have timber stands: B8-032
    a. with at least 40 percent of the crop trees at least 8 inches DBH, and
    b. with at least 70 percent crown closure.

5. Precommercial and commercial thinning may occur. B8-033

6. Even-age silvicultural techniques shall be considered. Uneven-age management may be considered. B8-034 B8-035

7. Ground machine yarding of logs should not occur. B8-036

8. Firewood gathering may occur. B8-037

H. Soil, Water and Air Quality

1. Soil and water improvement activities shall be encouraged and shall be designed so that earthflow movements will not be reactivated or accelerated. B8-038 B8-039

2. The combined cumulated detrimental impacts, occurring from both past and planned activities, of soil compaction, puddling, displacement, erosion, and/or several burned soil, should not exceed 8 percent of a project activity area. Landings, non-transportation system roads, and dispersed recreation sites should be included in the 8 percent. See Forestwide Soil Productivity Standards and Guidelines regarding cumulated soil impacts. **B8-040** **B8-041**

3. See Forestwide Soil Productivity, Water, Riparian Area and Air Quality Standards and Guidelines.

I. Minerals Management

1. Mineral explanation and development activities may occur. See Forestwide Minerals Management Standards and Guidelines. **B8-042**

2. Mineral exploration and development activities shall not be allowed to reactivate or accelerate earthflow movement. **B8-043**

J. Geology

See Forestwide Geology Standards and Guidelines.

K. Lands and Special Uses

1. Recreation and non-recreation special uses may occur. **B8-044**

2. Special uses shall not be allowed to reactivate or accelerate earthflow movement. **B8-045**

3. Powerline corridors may occur. Openings created should not exceed 10 acres and 20 acres on high risk and moderate risk earth flows, respectively. **B8-046** **B8-047**

L. Transportation Systems/Facilities; Travel and Access Management

1. Roads and associated facilities shall be designed, located, constructed and maintained to not reactivate or accelerate earthflows. **B8-048**

2. Roads and facilities shall not be designed or located across the toe or scarp of high or moderate risk earthflows. **B8-049**

3. Maintenance of roads and drainage facilities shall be emphasized. **B8-050**

4. Off-road vehicle recreational use shall be permitted only on designated trails. **B8-051**

M. Fire Prevention and Suppression

1. See Forestwide Standards and Guidelines for Forest Protection.

2. Tractor firelines should not be constructed across the toe or scarp of high or moderate risk earthflows. **B8-052**

N. Wood Residue Management

1. See Forestwide Soil Productivity, Wildlife and Forest Diversity Standards and Guidelines for coarse woody debris.
2. Prescribed fire may occur. **B8-053**

O. Integrated Pest Management

1. Integrated Pest Management activities may occur. See Forestwide Timber Management Standards and Guidelines for Integrated Pest Management. **B8-054**
2. Animal damage control activities may occur when necessary to maintain minimum stocking levels. **B8-055**

B9 Wildlife/Visual Area

Goal

Provide high quality rearing habitat for elk and other wildlife species while supplying Forest visitors with views of a wide variety of natural appearing landscape features, including meadows, lakes, and valleys. A secondary goal is to maintain a healthy forest condition through a variety of timber management practices.

Location

This Management Area encompasses a portion of the Forest that is valuable for wildlife, principally deer and elk, and also is important to the visual quality of the upper Highway 35 Viewshed.

The B9 Management Area is mapped as part of the preferred alternative (see Alternative Q in the accompanying map packet). It is located in the upper reaches of the East Fork Hood River drainage on the southeast side of Mt. Hood; it straddles Highway 35. Other Management Areas representing Management Requirements, e.g. B7 General Riparian Area (unmapped) and B5 Pileated Woodpecker/Pine Marten Habitat Area (see Wildlife Resources map, supplement to Alternative Q, in the map packet), are inclusions within the B9 Management Area boundaries. B7 and B5 Management Area prescriptions, as well as the B9 prescription, jointly apply to the corresponding inclusions.

Desired Future Condition

Major Characteristics

- Hiking, horse, and cross country ski trails available.
- Evidence of human activities may be present, but is subordinate to the natural landscape character.
- Small openings scattered amongst major big-game travel routes.
- Vehicle access off Highway 35 may be heavily restricted.
- Seasonal changes in vegetation color and texture are readily evident.
- Non-motorized recreational activities will be encouraged in both summer and winter.

Sensory Perceptions

- Visually pleasing.
- Sense of natural harmony in the landscape.
- The presence of wildlife activity is evident.

B9 Wildlife/Visual Area

A. Dispersed Recreation

1. Dispersed recreation may occur. B9-001

2. Recreational off-road vehicle activities should not be permitted. B9-002

3. Foot travel and mountain bicycle use may occur only on designated trails. Off-trail travel should be discouraged. B9-003 B9-004

4. A range of winter recreation activities may occur. B9-005

B. Developed Recreation

No new summer use developed recreation sites should be constructed. B9-006

C. Visual Resource Management

1. All management activities shall achieve visual quality objectives (VQO) of foreground Retention, and middleground Partial Retention as viewed from Highway 35. B9-007

2. All management activities shall achieve a VQO of Modification as viewed from Road 3540. B9-008

3. See Forestwide Visual Resource Management Standards and Guidelines for VQOs prescribed from trails.

D. Cultural Resources Management

See Forestwide Cultural Resources Management Standards and Guidelines.

E. Wildlife

1. Deer and Elk Habitat

   a. Five to 10 percent of the area (excluding natural meadows) should be maintained in forage condition for deer and elk, e.g. conifer plantations 0 to 10 years of age. B9-009

   b. Forage areas shall not be more than 600 feet from a forest stand which provides cover for deer and elk. Timber harvest units should be irregularly shaped to maximize the interface of forage and cover areas. B9-010 B9-011

c. Timber harvest units should be seeded with high quality deer-elk forage species and fertilized. Seeding and fertilizing prescriptions shall be integrated with visual quality and silvicultural objectives. Seeding with native species should be favored. **B9-012** **B9-013** **B9-014**

d. Optimal thermal cover for deer and elk should be maintained on 15 to 20 percent of the Management Area. **B9-015**

e. Forest stands managed as cover areas should be at least 30 acres in size and be more than 600 feet wide (measured across the narrowest point). **B9-016**

2. Habitat improvement activities for other wildlife species should be encouraged. **B9-017**

F. Fisheries

Fisheries habitat rehabilitation and enhancement activites may occur. See Forestwide Fisheries Standards and Guidelines. **B9-018**

G. Range Management

Existing commercial livestock grazing may be permitted. See Forestwide Range Management Standards and Guidelines. **B9-019**

H. Timber Management

1. Regulated timber harvest should occur. Timber salvage activities may occur. **B9-020** **B9-021**

2. Uneven-age management shall be considered for all timber harvest proposals in visual foreground areas. Uneven-age management should be considered beyond foreground areas. **B9-022** **B9-023**

3. Even-age management shall be considered for all timber management proposals **B9-024**

4. Timber felling, yarding and hauling shall not be permitted during deer and elk fawning, calving and rearing season, i.e. generally 1 April through 30 July. **B9-025**

5. Firewood cutting shall occur only in designated areas, and only outside of fawning, calving and rearing seasons. **B9-026**

I. Soil, Water, and Air Quality

See Forestwide Soil Productivity, Water, Riparian Area, and Air Quality Standards and Guidelines.

J. Minerals Management

1. Minerals exploration and development may occur. See Forestwide Minerals Management Standards and Guidelines. **B9-027**

2. Common variety mineral resources (e.g. sand and gravel) may be developed if impacts to deer and elk habitat are minimized and visual resource management objectives are achieved. **B9-028**

K. Geology

See Forestwide Geology Standards and Guidelines.

L. Lands, Special Uses, Rights-of-way and Permits

1. National Forest System lands shall be retained. See Forestwide Lands Program Standards and Guidelines. **B9-029**

2. Utility corridors, towers, and/or rights-of-way shall be designed to meet visual quality objectives. **B9-030**

3. Special use and study permits shall have stipulations to protect key wildlife habitat and minimize disturbance to deer and elk. **B9-031**

M. Transportation Systems/Facilities; Travel and Access Management.

1. Roads open to recreational vehicle use may occur. Open road density should not exceed 1.5 miles per square mile. Roads that are necessary shall be developed at a minimum standard, i.e. minimizing effects on deer and elk habitat. **B9-032** **B9-033** **B9-034**

2. Existing off-road vehicle tracks, and other wheel tracks, should be closed and rehabilitated, e.g. blocked, stabilized and returned to a natural condition. **B9-035**

3. Vegetation adjacent to roads or associated facilities shall be managed to provide for user safety and protect resources and investments (e.g. in accordance with the Vegetation Management FEIS, Record of Decision 1988, and Mediated Agreement, 1989). **B9-036**

4. Recreational motorized vehicle activity shall not be permitted except on open roads and designated parking areas. **B9-037**

N. Fire Prevention and Suppression

1. See Forestwide Forest Protection Standards and Guidelines.

2. Post-fire rehabilitation shall be responsive to longterm visual quality and wildlife habitat resource values. **B9-038**

O. Wood Residue Management

1. See Forestwide Wildlife, Soil Productivity and Forest Diversity Standards and Guidelines regarding woody debris.

2. Prescribed burning should be encouraged for areas where timber management objectives can be achieved and for deer and elk habitat enhancement. **B9-039**

3. Logging residue treatment may be restricted during fawning, calving and rearing season (i.e. 1 April through 30 July). **B9-040**

4. Logging and precommercial thinning slash (i.e. materials less than 10 inches in diameter) accumulation on slopes less than 50 percent should not exceed an average depth of 14 inches: **B9-041**

   a. for more than 20 percent of the project activity area, e.g. clearcut, precommercial thin and commercial thin.

   b. for any area larger than 10 acres.

P. Integrated Pest Management.

Integrated Pest Management activities may occur. See Forestwide Timber Management Standards and Guidelines. **B9-042**

The great horned owl is a predator of the spotted owl.

B10 Deer and Elk Winter Range

Goal

Provide high quality deer and elk habitat for use during most winters. Provide for stable population of mule deer and Rocky Mountain elk on the eastside and black-tailed deer and Roosevelt Elk on the westside of the Cascades. Secondary goals are to maintain a healthy forest condition through a variety of timber management practices and to provide dispersed summer and developed recreation opportunities.

Location

These Management Areas are dispersed at lower elevations across the Forest. They are assumed to be areas where at least 80 percent of the deer and elk are found at least 80 percent of the time during winter months. These areas are generally below 2800 feet on the westside and 3000 feet on the eastside.

B10 Management Areas are mapped as part of the preferred alternative (see Alternative Q in the accompanying map packet). Other Management Areas representing Management Requirements, e.g. B7 General Riparian Area (unmapped) and B5 Pileated Woodpecker/Pine Marten Habitat Area (see Wildlife Resources map, supplement to Alternative Q, in the map packet), are inclusions within the B10 Management Area boundaries. B7 and B5 Management Area prescriptions predominate.

B10 Management Area designations are overridden by B2 Scenic Viewshed and B8 Earthflow. See B2 and B8 prescriptions for selected areas with specific deer and elk winter range Standards and Guidelines.

Desired Future Condition

Major Characteristics

- At least 50 percent of area is maintained in thermal and optimal cover.
- High production of berries, acorns, nuts and seeds is typical.
- Evidence of fire occurence is prevalent.
- Low interactions between people and deer-elk during critical winter stress periods are expected.
- Corridor for winter recreational use will be designated for higher elevation snow area access.
- Visual diversity of vegetation is evident.
- Evidence of timber harvest activity is prevalent.
- Scattered openings.
- Areas of dense heavy vegetation occur for cover.
- Occurrence of wildlife is evident and prevalent.

B10 Deer and Elk Winter Range

The following Standards and Guidelines apply to the B10 Management Area, versus "inventoried deer and elk winter range" (see Forestwide Wildlife Standards and Guidelines).

A. Dispersed Recreation

1. Dispersed winter recreation use shall be discouraged. **B10-001**

2. Human access should be restricted between December 1 and April 1 to reduce human interaction with wintering deer and elk. **B10-002**

B. Developed Recreation

1. Developed recreation facilities may occur. **B10-003**

2. Recreational use of developed facilities should be restricted between December 1 and April 1 to reduce human interaction with wintering deer and elk. **B10-004**

C. Visual Resource Management

1. Management activities shall achieve a Modification visual quality objective (VQO) as viewed from roads open during the summer. **B10-005**

2. See Forestwide Visual Resource Management Standards and Guidelines regarding VQOs prescribed from trails.

D. Cultural Resources Management

See Forestwide Cultural Resources Management Standards and Guidelines.

E. Wildlife and Fisheries Management

1. Habitat improvement activities should be encouraged. **B10-006**

2. See Forestwide Wildlife and Fisheries Standards and Guidelines.

F. Range Management

1. Existing commercial livestock grazing may occur. See Forestwide Range Management Standards and Guidelines. **B10-007**

2. Livestock grazing (e.g. forage utilization) shall be managed to provide winter forage for deer and elk. **B10-008**

3. Livestock grazing may be excluded after early summer to allow vegetation to regrow prior to the winter season. **B10-009**

4. Range management facilities (e.g. fences) should not impede deer and elk movements. **B10-010**

5. In situations where deer and elk and livestock grazing objectives cannot both be achieved, Allotment Management Plans shall be adjusted to assure deer and elk objectives are achieved. **B10-011**

G. Timber Management

1. Regulated timber harvest should occur. Timber salvage activities may occur. **B10-012** **B10-013**

2. Forest canopy closure should reach at least 70 percent canopy closure within 10 years of the last commercial thinning activity. **B10-014**

3. Precommercial thinning activities may be used to achieve deer and elk forage and/or cover objectives. **B10-015**

4. Firewood gathering should not be permitted between December 1 and April 1. Firewood gathering for commercial and personal use may be allowed in conjunction with timber management activities or in designated areas. **B10-016** **B10-017**

5. On eastside winter range, at least 30 percent of the natural shrub cover should persist after site preparation. **B10-018**

6. In areas capable of producing thermal cover, at least 50 percent of the area should be managed for thermal and/or optimal cover. In areas not capable of producing 50 percent cover, mitigation measures should be applied, e.g. decreased open road density or increased forage quality. **B10-019** **B10-020**

7. Optimal cover and thermal cover habitat components for deer and elk (measured at the area analysis level, i.e. approximately 5000 acres, or at the Management Area level) should encompass at least 50 percent of the area. Optimal cover should be at least 25 percent. **B10-021** **B10-022**

8. At least 80 percent of all regeneration and commercial thinning harvest units should provide nutritional forage enhancement for deer and elk. Examples of forage enhancement include: **B10-023**

    a. seeding or planting with high quality forage species, e.g. white clover, subterranian clover, orchard grass, red-osier dogwood, red stem ceanothus.

    b. Prescribed fire, e. g. broadcast burning.

    c. fertilizing.

9. Blocks of cover should be at least 600 feet wide and at least 30 acres in size. **B10-024**

10. Regeneration harvest units should average 15 acres in size. **B10-025**

11. Timber harvest operations should be restricted, and may be excluded, between December 1 and April 1. **B10-026** **B10-027**

12. Commercial thinning may be excluded to achieve deer and elk cover objectives. **B10-028**

H. Soil, Water and Air Quality

1. Rehabilitation and enhancement projects should be encouraged. **B10-029**

2. See Forestwide Soil Productivity, Water, Riparian Area and Air Quality Standards and Guidelines.

I. Minerals Management

1. Common variety mineral (e.g. sand and gravel) exploration and survey activities shall not occur between December 1 and April 1. **B10-030**

2. Common variety mineral development should not occur between December 1 and April 1. **B10-031**

3. Locatable and leasable mineral exploration and development should be discouraged between December 1 and April 1. **B10-032**

J. Geology

See Forestwide Geology Standards and Guidelines.

K. Lands and Special Uses

1. Activities associated with permits, leases, rights-of-way, and easments should be restricted between December 1 and April 1 to minimize impacts to deer and elk. Maintenance and repair of facilities may be permitted within the winter season. **B10-033** **B10-034**

2. Winter range lands should be retained (see Forestwide Lands Program Standards and Guidelines). **B10-035**

L. Transportation Systems/Facilities; Travel and Access Management

1. Open road density between December 1 and April 1 shall not exceed 1.5 miles of road per square mile. **B10-036**

2. Roads scheduled for seasonal closure should be closed to minimize interactions between humans and deer-elk and encourage deer and elk access to key habitat areas, e.g. wetlands. **B10-037**

3. Recreational vehicle access corridors should be provided during the winter to higher elevation snow zones to facilitate winter recreational opportunities. **B10-038**

4. Recreational access should be restricted between December 1 and April 1. **B10-039**

5. Recreational motorized vehicle use shall occur only on designated travel routes. Cross country recreational motorized travel shall be prohibited. **B10-040** **B10-041**

M. Fire Prevention and Suppression

See Forestwide Forest Protection Standards and Guidelines.

N. Wood Residue Management

1. Prescribed fire should be encouraged to achieve deer and elk habitat objectives. **B10-042**

2. Manipulation of natural fuel loading may occur and shall be consistent with Management Area management direction. **B10-043** **B10-044**

3. Logging and precommercial thinning slash (i.e. materials less than 10 inches in diameter) accumulation on slopes less than 50 percent should not exceed an average depth of 14 inches: **B10-045**

    a. for more than 20 percent of a project activity area (e.g. clearcut, precommercial thin, and commercial thin).

    b. for any area larger than 10 acres.

O. Integrated Pest Management

Integrated Pest Management activities may occur. See Forestwide Timber Management Standards and Guidelines. **B10-046**

B11 Deer and Elk Summer Range

Goal

Provide high quality summer rearing habitat for deer and elk. A secondary goal is to maintain a healthy Forest condition through a variety of timber management practices.

Location

This Management Area encompasses lands that are valuable habitat for deer and elk during the summer period. These areas are at relatively high elevations and typically include networks of riparian and wetland communities associated with gentle slopes.

Three B11 Management Areas are mapped as part of the preferred alternative; all are located on the Clackamas Ranger District (see Alternative Q in the accompanying map packet). Other Management Areas representing Management Requirements, e.g. B7 General Riparian Area (unmapped) and B5 Pileated Woodpecker/Pine Marten Habitat Area (see Wildlife Resources map, supplement to Alternative Q, in the map packet), are inclusions within the B11 Management Area boundaries. B7 and B5 Management Area prescriptions predominate.

Desired Future Condition

Major Characteristics

- Evidence of human activities are present, but are generally subordinate to the natural landscape character. Interactions between humans and deer and elk are minimal.
- Small created openings scattered amongst natural openings and areas of high quality cover.
- Vehicle access is limited.
- Evidence of forage enhancement projects are prevalent.

Sensory Perceptions

- Visually pleasing.
- Sense of natural harmony in the landscape.
- Evidence of deer, elk and other wildlife is prevalent.

B11 Deer and Elk Summer Range

A. Dispersed Recreation

1. Dispersed recreation activities may occur. **B11-001**
2. Recreational off-road vehicle use should not be permitted. **B11-002**
3. Foot travel and mountain bicycle use may be restricted and should occur only on designated trails. Off-trail travel should be discouraged. **B11-003** **B11-004** **B11-005**
4. A range of winter recreation activities may occur. **B11-006**

B. Developed Recreation

Summer use developed recreation sites should be discouraged. **B11-007**

C. Visual Resource Management

1. All management activities shall achieve a visual quality objective (VQO) of Modification as viewed from open roads. **B11-008**
2. See Forestwide Visual Resource Management Standards and Guidelines for VQOs prescribed for a "designated viewshed" from Upper Clackamas River in the Lemiti and Olallie Creeks area.
3. See Forestwide Visual Resource Management Standards and Guidelines for VQOs prescribed from trails.

D. Cultural Resources Management

See Forestwide Cultural Resources Management Standards and Guidelines.

E. Wildlife

1. Deer and Elk Habitat
    - a. Ten to 15 percent of the area where vegetation can be manipulated (excluding natural meadows) should be maintained in forage condition for deer and elk, e.g. conifer plantations 0 to 15 years of age. **B11-009**
    - b. Forage areas shall not be more than 600 feet from a forest stand which provides cover for deer and elk. Timber harvest units should be irregularly shaped to maximize the interface of forage and cover areas. **B11-010** **B11-011**

  c. Timber harvest units should be seeded with high quality deer-elk forage species and fertilized. Seeding and fertilizing prescriptions shall be integrated with silvicultural objectives. Seeding with native species should be favored. **B11-012 B11-013 B11-014**

  d. Optimal thermal cover for deer-elk should be maintained on at least 15 to 20 percent of each Management Area. **B11-015**

  e. Forest stands managed as cover areas should be at least 30 acres in size and be more than 600 feet wide (measured across the narrowest point). **B11-016**

2. Habitat improvement activities for other wildlife species should be encouraged. **B11-017**

F. Fisheries

Fisheries habitat rehabilitation and enhancement activites may occur. See Forestwide Fisheries Standards and Guidelines. **B11-018**

G. Range Management

Existing commercial livestock grazing may be permitted. See Forestwide Range Management Standards and Guidelines. **B11-019**

H. Timber Management

1. Regulated timber harvest should occur. Timber salvage activities may occur. **B11-020 B11-021**

2. Even-age management shall be considered and uneven-age management may be considered for all timber management proposals. **B11-022 B11-023**

3. Timber felling, yarding and hauling shall not be permitted during fawning, calving and rearing season, i.e. generally 1 April through 30 July. **B11-024**

4. Firewood cutting shall occur only in designated areas, and only outside of fawning, calving and rearing seasons. **B11-025**

I. Soil, Water, and Air Quality

See Forestwide Soil Productivity, Water, Riparian Area and Air Quality Standards and Guidelines.

J. Minerals Management

1. Minerals exploration and development may occur. See Forestwide Minerals Management Standards and Guidelines. **B11-026**

2. Common variety mineral resources (e.g. sand and gravel) may be developed. **B11-027**

3. Activities should be limited during fawning, calving and rearing season, i.e. April 1 through July 30. B11-028

K. Geology

See Forestwide Geology Standards and Guidelines.

L. Lands and Special Uses.

1. Lands that fall within B11 Management Areas shall be retained. See Forestwide Lands Standards and Guidelines. B11-029
2. Utility corridors, towers, and/or rights-of-way shall be designed to meet visual quality objectives. B11-030
3. Special use and study permits shall have stipulations to protect key wildlife habitat and minimize disturbance to deer and elk. Activities shall be limited from April 1 through July 30. B11-031 B11-032

M. Transportation Systems/Facilities; Travel and Access Management.

1. Roads open to recreational vehicle use may occur. Open road density should not exceed 1.5 miles per square mile. Roads that are necessary shall be developed at a minimum standard, i.e. minimizing effects on deer and elk habitat. B11-033 B11-034 B11-035
2. Existing off-road vehicle tracks, and other wheel tracks, should be closed and rehabilitated, e.g. blocked, stabilized and returned to a natural condition. B11-036
3. Recreational motorized vehicle activity shall not be permitted except on open roads and designated parking areas. B11-037
4. Winter, over-snow recreational activities may be permitted. B11-038

N. Fire Prevention and Suppression

1. See Forestwide Forest Protection Standards and Guidelines.
2. Post-fire rehabilitation activities shall be responsive to longterm wildlife habitat resource values. B11-039

O. Wood Residue Management

1. See Forestwide Wildlife, Soil Productivity and Forest Diversity Standards and Guidelines regarding woody debris.
2. Prescribed burning should be encouraged for areas where timber management objectives can be achieved and for deer and elk habitat enhancement. B11-040

3. Logging residue treatment may be restricted during fawning, calving and rearing season (i.e. April 1 through July 30). **B11-041**

4. Logging and precommercial thinning slash (i.e. materials less than 10 inches in diameter) accumulation on slopes less than 50 percent should not exceed an average depth of 14 inches:

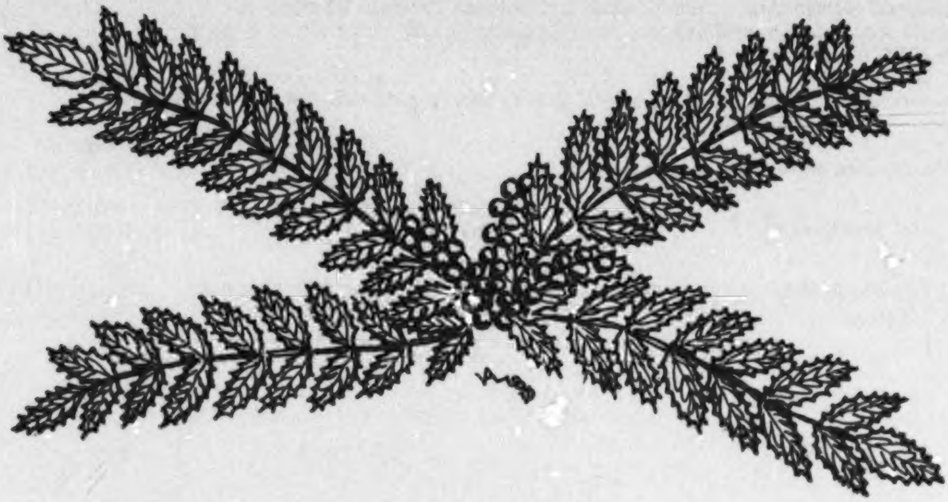
    a. for more than 20 percent of the project activity area (e.g. clearcut, precommercial thin or commercial thin).

    b. for any area larger than 10 acres.

P. Integrated Pest Management.

Integrated Pest Management activities may occur. See Forestwide Timber Management Standards and Guidelines. **B11-042**

B12 Backcountry Lakes



Dwarf Oregon grape.

Goal

Protect or enhance the recreation, fish and wildlife, or scenic values of designated lakes. A secondary goal is to maintain a healthy forest condition through a variety of timber management practices.

Location

These lakes are found outside of Wilderness and Special Interest Areas and scattered throughout the forest.

B12 Management Areas are mapped as part of the preferred alternative (see Alternative Q in the accompanying map packet). Other Management Areas representing Management Requirements, e.g. B7 General Riparian Area (unmapped) and B5 Pileated Woodpecker/Pine Marten Habitat Area (see Wildlife Resources map, supplement to Alternative Q, in the map packet), are inclusions within the B12 Management Area boundaries. B7 and B5 Management Area prescriptions, as well as the B12 prescription, jointly apply to the corresponding inclusions.

Desired Future Condition

Major Characteristics and Physical Features

- Access is usually limited to trail or cross country; occasionally accessed by road.
- Often small and limited in size.
- Usually naturally appearing around the lake and associated trails.

- No private commercial development.
- Fishing opportunities are generally available.
- Minimally disturbed lakeside and riparian vegetation.
- Timber harvest activities may be evident in the background, but remain subordinate to the characteristic landscape.

Sensory Perceptions

- Evidence of dispersed recreation campsites.
- High degree of awareness of the natural environment.
- Sense of freedom, independence and relaxation.
- Remoteness.

B12 Backcountry Lakes

Standards & Guidelines

A. Recreation Facilities, Use Administration and Trails

1. All management activities shall meet the Recreation Opportunity Spectrum (ROS) Class criteria (FSM 2311.1) as displayed in Table Four-32: **B12-001**

Table Four-32 Recreation Opportunity Spectrum Class for BackCountry Lake

Lake	Prescribed ROS Class	Ranger District
Black	Roaded Natural (RN)	Hood River
Buck	RN	Clackamas
Bump	Semi-Primitive Non-Motorized (SPNM)	Clackamas
Dinger	RN	Bear Springs
Fryingpan	RN	Bear Springs
Kinzel	Semi-Primitive Motorized (SPM)	Zigzag
Memaloose	SPNM	Estacada
Ottertail	Roaded Modified (RM)	Hood River
Round	RM	Clackamas
Scout	RN	Hood River
Si	RN	Clackamas
SKookum	RM	Estacada
Sportsman(2)	SPNM	Clackamas
Summit	RN	Bear Springs
Teacup	RN	Hood River
Veda	SPM	Zigzag

2. Structures and improvements may be provided to protect resource values, for administrative purposes, and to accommodate recreational use. **B12-002**

3. Recreational livestock may be tied, grazed, or held for extended periods in the foreground (*i.e.* 100 feet) of campsites, trails and all key interest areas. **B12-003**

   a. Utilization of current years vegetation growth should be limited to 30 percent (see Forestwide Range Management Standards and Guidelines). **B12-004**

   b. No more than 5 percent of an activity area should be in a detrimental soil condition from the combined impact of soil compaction, puddling, and displacement. See Forestwide Soil Productivity Standards and Guidelines. **B12-005**

   c. Exposed mineral soil around campsites, trails and key interest areas should not exceed 25 percent of the activitiy area. **B12-006**

4. Industrial camping shall not be allowed. **B12-007**

5. Dispersed recreational facilities, such as trails, campsites, and trail structures may occur. **B12-008**
   Dispersed campsites should be discouraged within 100 feet of lakeshores. **B12-009**

6. Trail construction/reconstruction may occur. Trails should be maintained in the **B12-010**
   prescribed ROS class. **B12-011**

7. Developed recreation facilities may be permitted. **B12-012**

8. See B7 Management Area Standards and Guidelines regarding recreational livestock access to lakes and streams.

B. Visual Resource Management

1. All management activities shall achieve the visual quality objectives (VQO) of Retention in the foreground, and Partial Retention for the remainder of the Management Area as viewed from the lake and lakeshore. **B12-013**

2. See Forestwide Visual Resource Management Standards and Guidelines regarding VQOs prescribed from trails.

C. Cultural Resources Management

See Forestwide Cultural Resources Management Standards and Guidelines.

D. Wildlife and Fisheries

1. Wildlife and fisheries habitat improvements may occur. **B12-014**

2. Fish stocking may occur cooperatively with Oregon Department of Fish and Wildlife. **B12-015**

E. Range Management

1. Existing commercial livestock grazing may be permitted. See Forestwide Range Standards and Guidelines regarding forage utilization. **B12-016**

2. Range improvements may occur. **B12-017**

F. Timber Management

1. Regulated timber harvest should occur. **B12-018**

2. Uneven-age management shall and even-age management may be considered for all **B12-019**
   timber harvest proposals. **B12-020**

3. Timber salvage activities should be permitted to harvest blowdown, hazard trees, insect attack, or other similar natural mortality. **B12-021**

4. Firewood cutting may be permitted for on-site recreation use if it does not detract from the natural appearance of the area or conflict with other recreational uses and riparian resource values. Personal use firewood cutting may be allowed only in designated areas. B12-022 B12-023

5. Harvest operations should be timed to avoid conflicts with recreation activities, e.g. on weekends and holidays. B12-024

G. Soil, Water, and Air Quality

1. See Forestwide Soil Productivity, Water, Air Quality, and Riparian Area Standards and Guidelines.
2. See B7 General Riparian Management Area Standards and Guidelines.
3. Management activities should not accelerate the natural eutrophication process of the lakes. B12-025

H. Minerals Management

1. Locatable and leaseable minerals exploration and development may occur. See Forestwide Minerals Management Standards and Guidelines. B12-026

2. Common variety minerals (e.g. sand and gravel) should not be developed within the visual foreground of the lake and lakeshore. B12-027

3. Mineral exploration should be performed during low recreational use seasons designated to reduce conflict with high recreation activity. B12-028

4. Facilities and excavations developed during mineral exploration and/or development should be designed to minimum standards, and shall be rehabilitated immediately following project completion. B12-029 B12-030

I. Geology

See Forestwide Geology Standards and Guidelines.

J. Lands and Special Uses

1. Recreation and nonrecreation special uses, permits, leases, rights-of-way and easements should be discouraged and should meet objectives of the ROS setting. Nonconforming special uses should be phased out. B12-031 B12-032 B12-033

2. Commercial development shall not be allowed. B12-034

K. Transportation Systems/Facilities; Travel and Access Management

1. New permanent roads shall not be built within areas with a prescribed ROS class of semi-primitive non-motorized. B12-035

2. New roads may be built within areas with prescribed ROS classes of semi-primitive motorized and roaded natural. **B12-036**

3. Road management objectives shall be consistent with the prescribed ROS class. **B12-037**

4. Associated road facilities and structures may occur. **B12-038**

5. Motorized access should be discouraged in near-foreground areas (i.e. 100 feet). The following lakes may be exceptions: **B12-039** **B12-040**
   a. North end of Summit Lake
   b. Scout Lake
   c. North side of Kinzel Lake

6. Vehicle access should not be provided within 1/2 mile of the following lakes: Buck, Dinger, and Veda. See Forestwide Fisheries Standards and Guidelines. **B12-041**

L. Fire Prevention and Suppression

See Forestwide Forest Protection Standards and Guidelines.

M. Wood Residue Management

1. See Forestwide Wildlife, Soil Productivity and Forest Diversity Standards and Guidelines regarding woody debris.

2. Prescribed burning may occur. **B12-042**

N. Integrated Pest Management

The suppression and prevention of pests shall be limited to outbreaks which threaten the recreation, wildlife, fish, or timber values of the area or adjacent resources. See Forestwide Timber Management Standards and Guidelines regarding Integrated Pest Management. **B12-043**

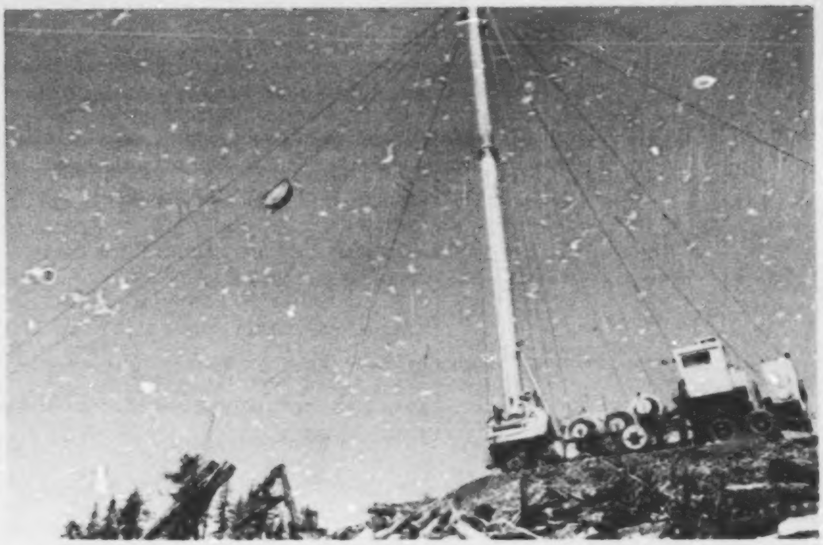
Category "C" Management Areas

The primary goal for this Management Area, i.e. C1 Timber Emphasis, is timber production. Regulated timber harvest is a planned output. Myriad other resource values will also be realized.

- C1 Timber Emphasis

Hamblen's lomatium.

C1 Timber Emphasis



High-lead cable yarding system.

Goal

Provide lumber, wood fiber, and other forest products on a fully regulated basis, based on the capability and suitability of the land. A secondary goal is to enhance other resource uses and values that are compatible with timber production.

Location

These Management Areas are scattered across the forest, ranging in size from less than 200 acres to thousands of acres.

C1 Management Areas are mapped as part of the preferred alternative (see Alternative Q in the accompanying map packet). Other Management Areas representing Management Requirements, e.g. B7 General Riparian Area (unmapped) and B5 Pileated Wood Pecker/Pine Marten Habitat Area (see Wildlife Resources map, supplement to Alternative Q in the map packet), are inclusions within the C1 Management Area boundaries. B7 and B5 Management Area prescriptions predominate.

Desired Future Condition

Major Characteristics

- Motor vehicle access is available to most areas.
- Primary road system is suitable for passenger cars. Local roads are suitable for high clearance vehicles.
- Some roads may be closed part of the year or for several years at a time.
- Areas inaccessible by roads are open to aerial logging and foot travel.
- Extensive stands of trees at various stages of development, arranged in a mosaic pattern that is somewhat random but shows the clear influence of landform, productivity and management objectives.
- On intensively managed areas there will be an even distribution of stand age classes up to approximately 120 years, running from seedlings to mature timber.
- Non-stocked recently harvested areas are in preparation for natural or planted regeneration.
- Understory vegetation consistent with ecological and successional stage of individual areas.
- Many stands have some mature trees held over from previous stands. These trees have specific biological functions.
- Diversity of plant and animal communities featuring species dependent on open habitat conditions.
- Smallest created openings are about one or two acres; largest are rarely more than 100 acres; average created opening size is 20 to 40 acres.
- Special sites such as campsites and overlooks are scattered throughout the the area.
- Roaded-modified dispersed recreation settings exist.

Sensory Perceptions

- Vegetation pattern reminiscent of a giant patchwork quilt.
- Open views of the landscape are frequent.
- Human activities are obvious, and may dominate the landscape.
- Many outstanding views of distant mountain peaks.
- Deer, elk, predators, and many species of small mammals and birds are common.

C1 Timber Emphasis

Standards and Guidelines

A. Dispersed Recreation

1. Dispersed recreation opportunities shall be provided and encouraged. Hiking and trail use, driving for pleasure, hunting, wildlife viewing, berry picking, cross-country skiing,the use of off-road vehicles, and cultural resource interpretation are examples of possible activities. **C1-001**

2. Dispersed recreation opportunities may be altered and/or temporarily precluded in localized areas to facilitate timber management activities. **C1-002**

3. "Special Places" shall be identified during project planning. Management prescriptions shall be developed for identified special places. See Forestwide Dispersed Recreation Standards and Guidelines. **C1-003** **C1-004**

4. Timber management activities should protect existing dispersed recreation facilities and structures such as trails, trailheads, bridges, and sites, or mitigate effects. **C1-005**

B. Developed Recreation

Developed recreation facilities may occur. See A10 Developed Recreation Management Area Standards and Guidelines. **C1-006**

C. Visual Resource Management

1. Management activities shall achieve a visual quality objective (VQO) of Modification as viewed from open roads; local roads and temporary roads are exceptions. **C1-007**

2. See Forestwide Visual Resource Management Standards and Guidelines regarding VQOs prescribed for trails.

D. Cultural Resources Management

See Forestwide Cultural Resources Management Standards and Guidelines.

E. Wildlife and Fisheries

1. Wildlife and fisheries habitat improvement activities shall be encouraged. **C1-008**

2. Habitat for threatened, endangered and sensitive plants and animals shall be protected or enhanced. Habitat for key wildlife species should be protected or enhanced (see Forestwide Wildlife Standards and Guidelines). C1- 009 C1-010

3. See Forestwide Wildlife Standards and Guidelines regarding forage and cover for inventoried deer and elk winter and summer ranges.

F. Range Management

1. Existing commercial livestock grazing may be permitted. Livestock use may be restricted when in conflict with seedling survival and growth. C1- 011 C1-012

2. Range improvement activities may occur. Plant species selected for range improvement work should not significantly compete with desired forest tree species. C1-013 C1-014

3. Timber management activities should protect existing range structural improvements/natural barriers or mitigate the effects. C1-015

G. Timber Management - Silvicultural Systems

1. Regulated timber harvest should be scheduled. C1-016

2. Even-age management shall be considered. Uneven-age management may be considered to achieve important special management objectives. See Forestwide Timber Management Standards and Guidelines for guidance on silvicultural systems. C1-017 C1-018

3. Even-age regeneration harvest prescriptions may employ either natural or artifical regeneration methods to reestablish tree plantations. The chosen method shall have a reasonable expectation of success within five years after the regeneration harvest, and should have demonstrable superiority in quality and distribution of stocking, and economic efficiency. C1-019 C1-020 C1-021

4. Priority for harvest should be given to stands that are diseased, infested with damaging insect populations, or damaged by storms. C1-022

5. Fragmentation of old growth forest stands of substantial size should be minimized. See Forestwide Forest Diversity Standards and Guidelines. C1-023

6. The full range of silvicultural options should be considered under appropriate conditions. Included are stocking level control through precommercial thinning, cleaning and weeding, commercial thinning, fertilization, genetic tree improvement, regeneration cutting with either natural or artifical methods, even-age or uneven-age silvicultural systems, and site preparation methods. C1-024

7. Windthrow risk should be minimized. C1-025

8. A variety of logging systems should be addressed in planning timber harvest, such as ground machines, cable or helicopter systems. C1-026

9. Appropriate site preparation activities shall be completed if cost effective and if necessary for reforestation. This should be accomplished in a manner that considers other resources and meets Standards and Guidelines for soil protection. See Forestwide Soil Productivity, Water, Riparian Area, Wildlife and Timber Management Standards and Guidelines. **C1- 027** **C1-028**

10. Crop tree stocking level at 5 years of age should be 250 to 415 well spaced crop trees per acre. Stocking level shall be at least 125 trees per acre. **C1- 029** **C1-030**

11. Vegetation in plantations should be managed for optimum return on investment. Plantations should be considered for need of release treatment, and those needing release should follow the Implementation Guidelines for the Vegetation Management FEIS Record of Decision (1988) and Mediated Agreement (1989). See Forestwide Timber Management Standards and Guidelines. **C1- 031** **C1-032**

12. Precommercial thinning, commercial thinning and fertilization should be implemented. See Forestwide Timber Management Standards and Guidelines. **C1-033**

13. The Genetic Tree Improvement Program shall implement breeding zone programs for Douglas-fir, Noble fir, Ponderosa pine, and Western white pine. Evaluation plantations, seed orchards, select trees, and seed production areas shall be utilized. **C1-034** **C1-035**

H. Soil, Water, and Air Quality

1. See Forestwide Soil Productivity, Water, Air Quality and Riparian Area Standards and Guidelines.
2. Soil productivity and Watershed improvement activities shall be encouraged. **C1-036**

I. Minerals Management

Minerals exploration and development (i.e. locatable, leaseable and common variety) may occur. See Forestwide Minerals Management Standardsand Guidelines. **C1-037**

J. Geology

See Forestwide Geology Standards and Guidelines.

K. Lands and Special Uses

Recreation and non-recreation special uses, permits, easements and rights-of-way may occur. See Forestwide Lands Program and Special Uses Standards and Guidelines. **C1-038**

L. Transportation Systems/Facilities; Travel and Access Management

1. Road construction, reconstruction and maintenance may occur. See Forestwide Transportation Systems/Facilities; Travel and Access Standards and Guidelines. C1-039

2. A trail system should be developed and designed to disperse use, and provide a range of difficulty levels consistent with Management Area management direction. C1-040

3. Off-road vehicle (ORV) use should be encouraged. ORV use should be restricted within specific areas with conflicting resource objectives. C1-041 C1-042

M. Fire Prevention and Suppression.

See Forestwide Forest Protection Standards and Guidelines.

N. Wood Residue Treatment

1. Management of dead, down woody material loading levels should be consistent with Forestwide Soil Productivity, Forest Diversity, and Wildlife Standards and Guidelines for coarse woody debris. C1-043

2. Prescribed burning should be considered for areas where timber management objectives and/or other resource values can be achieved. C1-044

O. Integrated Pest Management

1. Integrated Pest Management (IPM) activities may occur. See Forestwide Timber Management Standards and Guidelines regarding IPM. C1-045

2. Animal damage control programs should be conducted when necessary to protect plantations from falling below minimum stocking levels prescribed. The most cost effective method should be used commensurate with other resource objectives. C1-046 C1-047

Category "D" Management Areas

D	Bull Run Watershed Management Unit
DA2	North Buffer - No Regulated Harvest
DA3	Research Natural Area (RNA)
DA8	Spotted Owl Habitat Area
DA9	Key Site Riparian
DA13	Bald Eagle Recovery Area
DB2	Scenic Viewshed
DB5	Pileated Woodpecker/Pine Marten Habitat Area
DB7	General Riparian Area
DB8	Earthflow
DC1	Timber Emphasis

Looking up from Camp Creek; Bull Run area.

D Series - Bull Run Watershed Management Unit

Goal

Serve as the main water supply for the City of Portland and its service areas, with the principal objective of the production of "pure, clear, raw potable" water of a quantity and quality that is at least as good as that historically produced. A secondary objective is the protection, management, and utilization of renewable resources found within the Management Unit (Bull Run Planning Unit Final Environmental Statement (FEIS), dated January 24, 1979).

Explanation

The Bull Run Watershed Management Unit D-Series is a conglomerate of Management Areas with a common primary resource management goal of providing water. Secondary goals are represented by individual Management Areas and they largely correspond with the goals described in their Management Area counterparts outside of the Bull Run, e.g. the primary goal of A9 (outside the Bull Run Watershed) is the secondary goal of DA9 (inside the Bull Run Watershed). The Desired Future Conditions and Standards and Guidelines are also very similar between corresponding Management Areas inside and outside the Watershed, e.g. DC1 and C1.

The general D-Series Standards and Guidelines are detailed here, followed by Management Area Standards and Guidelines. The Management Area Standards and Guidelines are similar to corresponding Management Areas outside of the Bull Run except recreational access is largely prohibited. Exceptions and additions are also noted here by Management Area.

The Practices Table (Table Four-35) also provides management direction for the D-Series Management Areas.

Location

The D-Series designation applies to lands established as the Bull Run Watershed Management Unit (Public Law 95-200 and Portland City Council Resolution 31832). The Bull Run Watershed Management Unit, including non-National Forest System lands (i.e. approximately 4,400 acres), comprises approximately 95,400 acres (95,382 in PL 95-200). Land use allocations identified in the Bull Run FEIS (1979) are incorporated into the Forest Plan through the following Management Area designations.

DA1 Bull Run Physical Drainage

This Management Area includes the area within the physical watershed boundaries of the Bull Run River upstream from the headworks at the Bull Run Reservoir No. 2 dam (see Alternative Q in the accompanying map packet). Several other Management Areas (i.e. DA3, DA8, DA9, DA13, DB5 and DB7) are also included within the physical watershed boundaries; these Management Area prescriptions predominate over the DA1 prescription.

DA2 North Buffer - No Regulated Harvest

This Management Area is located outside the physical drainage of the Bull Run River in the headwaters of Tanner and Eagle Creeks, adjacent to the Columbia Wilderness (see Alternative Q in the accompanying map packet). Oregon Wilderness Act (1984) and the accompanying Senate Report 98-465 and HR 1149 provided direction to preclude regulated timber harvest from this tract.

DA3 Research Natural Area (RNA)

Three tracts are included within this Management Area (see Alternative Q in the accompanying map packet). The existing Bull Run RNA (360 acres) and the two proposed RNAs, i.e. the Bull Run Addition (400 acres) and Big Bend Mountain (5,160 acres). All three areas are within the physical drainage of the Bull Run River. The DA3 prescription predominates over the DA1 prescription. However, DA3 and DA8 prescriptions are jointly prescribed for the areas where they overlap (i.e. delineated with dashed lines on the Alternative Q map).

DA8 Spotted Owl Habitat Area

This Management Area is distributed throughout the Bull Run Management Unit, both within the physical drainage and in the Bull Run Buffer (see Alternative Q in the accompanying map packet). The DA8 prescription predominates over the other D-Series prescriptions. The DA8 prescription is jointly applied with DA3 prescriptions where they overlap (i.e. delineated with dashed lines on the Alternative Q map.)

DA9 Key Site Riparian

This Management Area is distributed throughout the Bull Run Management Unit, both within the physical drainage and in the Bull Run Buffer (see Alternative Q in the accompanying map packet). The DA9 prescription predominates over the other D-Series prescriptions.

DA13 Bald Eagle Recovery Area

This Management Area is represented by two small tracts within the Bull Run physical drainage. The sites are located adjacent to Bull Run Lake and Bull Run Reservoir No. 1 (see the Wildlife Resources map, supplement to Alternative Q in the accompanying map packet). The DA13 prescription predominates over the other D-Series prescriptions.

DB2 Scenic Viewshed

This Management Area consists of two areas located in the Bull Run North Buffer (see Alternative Q in the accompanying map packet). The tracts are recognized to maintain visual quality as viewed from the Columbia River Gorge National Scenic Area.

DB5 Pileated Woodpecker/Pine Marten Habitat Area

This Management Area is distributed throughout both the Bull Run physical drainage and buffer (see the Wildlife Resources map, supplement to Alternative Q in the accompanying map packet). The DB5 prescription predominates over DB2, DB8 and DC1. The DB5 prescription is jointly applied with DA1, DA2, DA3, DA8, DA9, DA13 and DB7.

DB7 General Riparian Area

This Management Area is distributed throughout both the Bull Run physical drainage and buffer. DB7 is not mapped. The DB7 prescription predominates over DB2, DB8 and DC1. The DB7 prescription is jointly applied with DA1, DA2, DA3, DA8, DA9, DA13 and DB5.

DB8 Earthflow

This Management Area is represented by one tract located in the Bull Run Buffer immediately downstream from the Bull Run Reservoir No. 2 dam and headworks. The DB8 prescription is subordinate to DB5 and DB7 prescriptions.

DC1 Timber Emphasis

This Management Area is distributed throughout much of the Bull Run Buffer. The DC1 prescription is subordinate to DB5 and DB7 prescriptions.

Desired Future Condition*

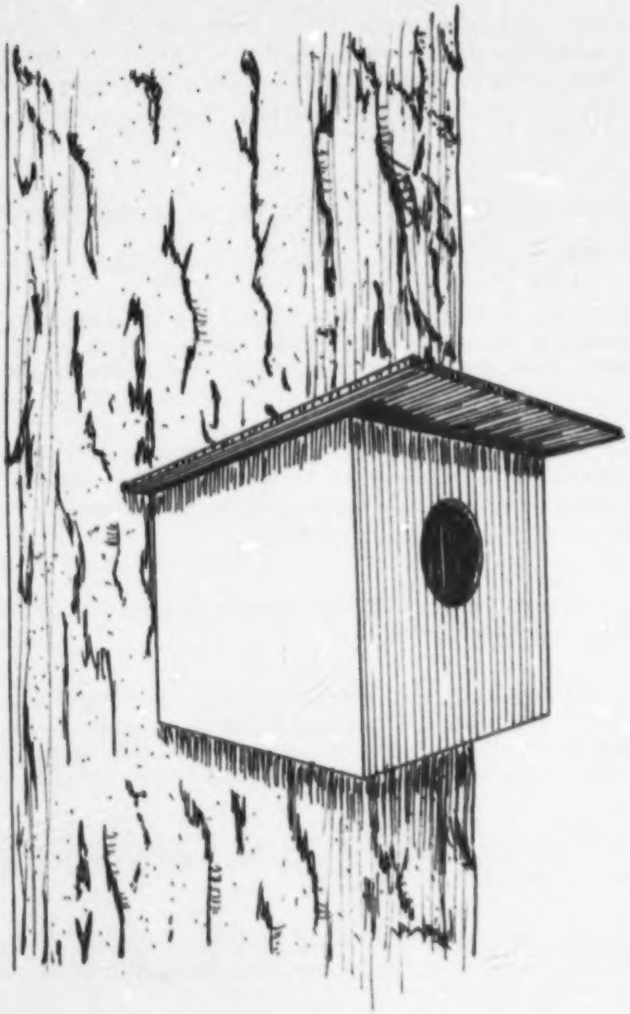
Major Characteristics, Attributes, and Physical Features

- Provides consistently excellent water quality (e.g. clarity, and chemistry)
- Human activities are limited and focused on reducing the potential for catastrophic wildfire and maintaining watershed stability and water quality.
- Predominantly natural or natural-appearing environment.
- Access limited to that necessary to accomplish the stated goal.
- No public entry without permit; no public recreation use.
- Clear, cold lakes and streams.
- Varied topographic relief, ranging from nearly level to very steep.
- Old growth forests predominate, with limited timber harvest areas and stands of younger trees.
- Disturbance (e.g. fires, windthrow, timber harvest, and channel scouring) is localized and infrequent.

** Each Management Area designation within the Bull Run Watershed Management Unit may exhibit one or more of the characteristics, attributes, and physical features associated with similar Management Area designations occurring outside of the Watershed Management Unit boundary.*

Sensory Perceptions

- Limited human contact.
- Sounds of wildlife, birds, and/or flowing water predominate.
- Sights, sounds, and smells associated with human activities are essentially absent within the Bull Run Drainage, and limited within the Buffer Area.
- Remote, natural, forested setting.
- Feeling of being in a special, protected area.



Bird nestbox.

D Bull Run Watershed Management Unit

Management Area Category D has been subdivided into several Management Areas which coincide with the management direction established in the Bull Run Planning Unit Final Environmental Impact Statement (1979). Several additional Management Areas have been included to be responsive to issues (e.g. Spotted Owl Habitat Area, and Key Site Riparian) raised subsequent to release of the Bull Run FEIS.

The intent of the following Standards and Guidelines is to complement existing direction provided in The Bull Run Planning Unit Final Environmental Impact Statement (1979). The primary objective of management direction is to ensure that all activities reduce long term risks to water quality and quantity. In the event of apparent conflict between these Standards and Guidelines and the Bull Run FEIS (1979), guidance and direction in the Bull Run FEIS (1979) predominates.

General Standards and Guidelines (Applies to all D-Series Management Areas)

A. The Forest Service and the City of Portland Water Bureau shall meet at least annually to review planned management activities and impacts on water quality and quantity, and to assure that land management and operational activities within the unit are appropriately coordinated. **D-001**

Note: *"Staff of the Portland Water Bureau and the Forest should meet on a day-to-day basis for effective planning and operational management. Current data should be compared at least annually for the purpose of determining compliance with the standards and the significance of any deviation."* (Bull Run Planning Unit FEIS)

B. Public entry into the Management Unit shall not be permitted except as agreed to by the Forest Service and the City of Portland Water Bureau. **D-002**

C. The Pacific Crest National Scenic Trail (PCT) and Buck Peak Trail may remain in their **D-003**
present location. Trail reconstruction and maintenance may occur. New or alternative trails **D-004**
shall be constructed outside of the Watershed Management Unit. **D-005**

1. The trails should be posted and the trespass provision shall be enforced by the Forest **D-006**
   Service to keep people from leaving the trail. **D-007**

2. In the event that problems develop regarding public use of the trails, administrative controls and/or trail closure may be utilized as corrective measures (Bull Run Planning Unit FEIS). **D-008**

D. Scientific research may continue within the Watershed Management Unit. **D-009**

E. The development, extraction, and use of common variety mineral resources (rock, gravel, sand, etc.) within the Bull Run Watershed Management Unit shall be accomplished only after coordination and agreement with the City of Portland. **D-010**

1. Common variety minerals within the DA1 Management Area may be utilized on National Forest system lands within the Watershed Management Unit if development and extraction can be accomplished in a manner which is consistent with other resource objectives. **D-011**

2. Common variety minerals within the DA2, DB2, and DC1 Management Areas may be utilized. **D-012**

3. Common variety minerals development shall be prohibited within DA3, DA8, DA9 and DA13 Management Areas. Development shall be discouraged within DB5, DB7 and DB8. **D-013** **D-014**

F. See also the current Administrative and Operational Guidelines for the Bull Run Watershed Mangement Unit.

G. Cultural Resources Management

See Forestwide Cultural Resources Management Standards and Guidelines.

H. Range Management

Commercial livestock grazing shall be prohibited. **D-015**

I. Geology

See Forestwide Geology Standards and Guidelines.

J. Lands and Special Uses

1. Lands shall be retained. See Forestwide Lands Program Standards and Guidelines. **D-016**

2. Existing powerline corridors and facilities may occur. **D-017**

3. Recreation special uses shall be prohibited except those associated with use of the Pacific Crest National Scenic Trail and the Buck Peak Trail. **D-018**

4. Non-recreation special uses shall be discouraged. **D-019**

K. Fire Prevention and Suppression

1. See Forestwide Forest Protection Standards and Guidelines

2. See DA3 Management Area Standards and Guidelines for exceptions.

3. Application of aerial fire retardants in fire suppression shall be permitted only as approved by the City of Portland Water Bureau.

L. Wood Residue Management

1. See Forestwide Soil Productivity, Wildlife and Forest Diversity Standards and Guidelines regarding woody debris.
2. Prescribed fire may occur. See DA3 and DA8 Management Area Standards and Guidelines. **D-020**

M. Integrated Pest Management

1. Chemical insecticides and herbicides shall be prohibited within the Bull Run physical drainage. **D-021**
2. See Forestwide Timber Management Standards and Guidelines regarding Integrated Pest Management.

Management Area Specific Standards and Guidelines

Painted turtle.

DA1 Bull Run Physical Drainage

A. Planning and Implementation

As directed by the Bull Run Watershed Management Unit Act (Public Law 95-200), the City of Portland Water Bureau and the Mt. Hood National Forest shall: **DA1-001**

1. Jointly participate in the planning of all projects.
2. Cooperatively conduct water monitoring programs.

B. Management of Water Quantity and Quality

1. Water quantity and quality shall be maintained at or above historical levels (Public Law 95-200). **DA1-002**
2. Water quality shall meet standards developed cooperatively between the Forest Service and the City of Portland. See Bull Run Water Quality Standards, 1984 (or updated versions). **DA1-003**

C. Fire Potential and Fuels Management

1. Fire and fuels management activities shall provide for both short term and long term protection of water quality. **DA1-004**

2. Risk of water quality degradation due to catastrophic wildfire shall be reduced. **DA1-005**

    a. Activities which reduce the hazard shall be permitted. **DA1-006**

    b. Activities which reduce the risk of human-caused fires within the Management Unit shall be permitted. **DA1-007**

        1) Public access (i.e. including contractors) shall be restricted by a permit system. **DA1-008**

        2) During periods of extreme fire weather conditions, access should be limited to Forest Service and Water Bureau personnel and others needed to protect the watershed and operate the water system. **DA1-009**

D. Use of Chemicals

1. Application of chemical insecticides and herbicides shall be prohibited. **DA1-010**

2. Application of aerial fire retardants in fire suppression shall be permitted only as approved by the City of Portland Water Bureau. **DA1-011**

3. Use of chemicals shall not be permitted for any other purpose, unless approved by City of Portland Water Bureau and the Forest Service. **DA1-012**

E. Timber Management

1. Regulated timber harvest activities shall be prohibited. **DA1-013**

2. Unregulated timber harvest may be permitted only if water quality standards are met. The following timber harvest priorities shall apply: **DA1-014** **DA1-015**

    a. **Priority 1:** Timber harvesting necessary to resolve immediate problems such as stream cleanup, blowdown, insect and disease outbreaks, and serious fire hazard; or to accommodate water development projects such as reservoirs, pipelines, and roads.

    b. **Priority 2:** Timber harvesting needed to address potential long range problems which require treatment. These potential problems include floods, landslides, and wildfire. Treatment of these long term problems will be designed to avoid short term water quality degradation.

    c. **Priority 3:** Timber harvesting to utilize the timber resource where research results and experience has demonstrated that water quality will not be substantially affected.

3. To minimize soil disturbance, techniques such as suspended logging systems should be employed to minimize exposed bare soil, compaction, and alterations of natural hydrologic characteristics. **DA1-016**

4. Timber harvest activities may be seasonally restricted. **DA1-017**

5. Timber harvest should be limited to stable and low-sensitivity sites. Only Priority 1 timber harvest may occur on geologically unstable sites (e.g. earthflows and landslides) and steep (i.e. greater than 50 percent slopes) and erodible sites, i.e. priority 2 and 3 timber harvest are prohibited. **DA1-018** **DA1-019**

6. Clearcut harvest units may occur and should not exceed 25 acres in size. **DA1-020** **DA1-021**

7. Stands adjacent to plantations should not be harvested until the plantation site achieves preharvest hydrological conditions. Priority 1 harvest activities are an exception. **DA1-022** **DA1-023**

F. Fish and Wildlife Management

1. Existing fish habitat and populations shall be protected. **DA1-024**

2. Anadromous fish shall not be reintroduced. **DA1-025**

3. Wildlife habitat enhancement shall be encouraged. See Forestwide Standards and Guidelines for Threatened, Endangered, and Sensitive Plants and Animals. **DA1-026**

G. Hydroelectric Power

Hydroelectric power generation from existing and proposed dams may be permitted provided generation is compatible with the primary objectives of water quality. **DA1-027**

H. Visual Quality Management

All management activities should consider viewers outside of the Watershed Management Unit looking into the drainage, unless achievement would affect meeting the primary water quality objective. **DA1-028**

I. Minerals Management

Common variety minerals (e.g. sand and gravel) may be utilized on National Forest System lands. Quarry development shall protect water quality. **DA1-029** **DA1-030**

J. Road Construction and Maintenance

1. Roads may be constructed, reconstructed, and maintained where needed to support management activities within the drainage. **DA1-031**

2. Roads shall be designed and constructed to ensure stability and maintain water quality. **DA1-032**

3. Stream crossings shall be designed to allow free passage of water during major storm events. Emphasis shall be given to bridge construction rather than placement of fills and culverts on streams. Culvert arches and pipes shall be designed to contain excess water flow capability. **DA1-033** **DA1-034** **DA1-035**

K. Streamside Protection Areas

See DB7 General Riparian Area Standards and Guidelines.

L. Soils, Air Quality, and Forest Diversity

1. See Forestwide Soil Productivity, Air Quality, and Forest Diversity Standards and Guidelines.
2. Watershed improvement activities shall be encouraged. **DA1-036**
3. Site rehabilitation necessary due to recreational tresspass activities should occur. **DA1-037**

DA2 North Buffer - No Regulated Harvest

A. Pursuant to Senate Report 98-465, accompanying HR 1149, the Oregon Wilderness Act of 1984, regulated timber harvest shall be prohibited. Timber salvage activities may occur.	**DA2-001** **DA2-002**
B. Recreational access shall be regulated.	**DA2-003**
C. Existing roads may be maintained for administrative use (e.g. surveillance and fire suppression).	**DA2-004**
D. Management activities shall achieve a visual quality objective of Retention as viewed from Columbia Wilderness trails.	**DA2-005**
E. Site rehabilitation necessary due to recreational trespass activities should occur.	**DA2-006**

DA3 Research Natural Area

Sulphurous Cork (a fungus).

A. See A3 Research Natural Area Management Area Standards and Guidelines

B. Management within the Fir Creek drainage portion of the Big Bend RNA shall be conducted in a manner which protects the area's role as the contol watershed for the Bull Run water quality standards compliance process. **DA3-001**

1. Vegetative manipulation for research purposes shall not be allowed. **DA3-002**

2. Entry into the Fir Creek drainage shall be for water quality management purposes only. **DA3-003**

3. Requests for access to areas within the Fir Creek drainage may be granted by the District Ranger after consultation and coordination with the City of Portland. **DA3-004**

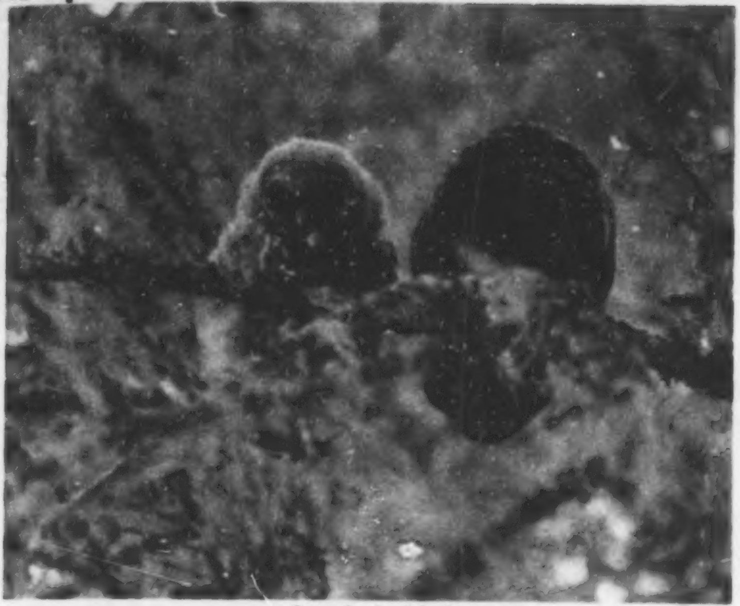
4. Use of ground machines (e.g. tractors) in suppression of wildfires shall be prohibited. **DA3-005**

C. Regulated timber harvest and unregulated timber harvest shall be prohibited. **DA3-006**

D. Site rehabilitation necessary due to recreational trespass activities should occur. **DA3-007**

E. Wildlife and fisheries habitat improvement, soil and water improvement, and prescribed fire activities may occur only as associated with approved research projects. **DA3-008**

DA8 Spotted Owl Habitat Area

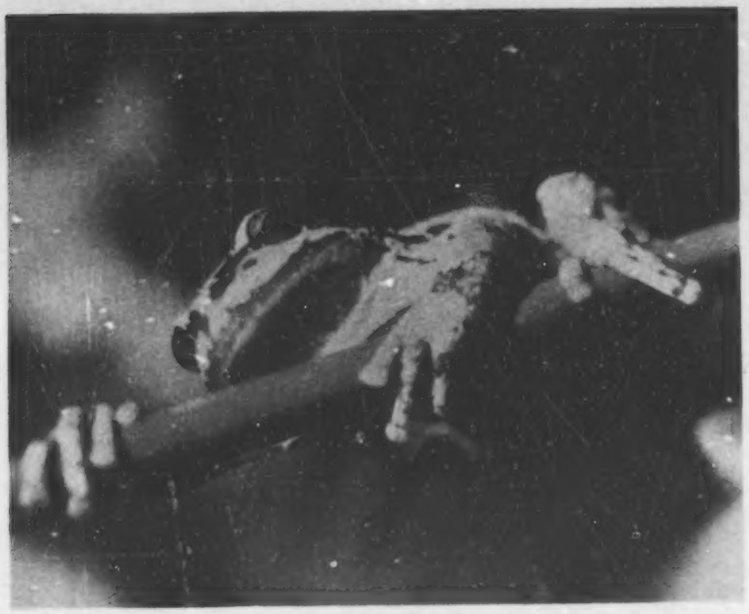


Spotted owl, adult with juvenile.

A. See A8 Spotted Owl Habitat Area Management Area Standards and Guidelines.

B. Site rehabilitation necessary due to recreational trespass activities should occur. **DA8-001**

C. Prescribed fire shall be discouraged. **DA8-002**



Pacific tree frog.

DA9 Key Site Riparian

A. See A9 Key Site Riparian Management Area Standards and Guidelines.

B. Unregulated timber harvest activities may occur to enhance riparian dependent resource values. **DA9-001**

DA13 Bald Eagle Habitat Area

A. See A13 Bald Eagle Habitat Area Management Area Standards and Guidelines.

B. Unregulated harvest activities may occur to enhance bald eagle habitat. **DA13-001**

Sierra onion.

DB2 Scenic Viewshed

A. See B2 Scenic Viewshed Management Area Standards and Guidelines.

B. Management activities shall achieve a visual quality objective of Partial Retention, within all distance zones, as viewed from Larch Mountain and the Columbia River Gorge. **DB2-001**

C. Regulated timber harvest and timber salvage activities may occur. **DB2-002**

DB5 Pileated Woodpecker/Pine Marten Habitat Area

A.	See B5 Pileated Woodpecker/Pine Marten Habitat Area Standards and Guidelines.	
B.	Within the physical drainage, regulated timber harvest shall be prohibited; however, unregulated timber harvest may occur.	**DB5-001** **DB5-002**
C.	Outside of the physical drainage, regulated timber harvest and timber salvage activities may occur.	**DB5-003**

DB7 General Riparian Area

Wood duck.

A. See B7 General Riparian Area Management Area Standards and Guidelines.

B. Within the physical drainage, regulated timber harvest shall be prohibited; however, unregulated timber harvest may occur. **DB7-001 DB7-002**

C. Outside of the physical drainage, regulated timber harvest and timber salvage activities may occur. **DB7-003**

DB8 Earthflow

A. See B8 Earthflow Management Area Standards and Guidelines.

B. Regulated timber harvest and timber salvage activities may occur. **DB8-001**

DC1 Timber Emphasis

Kinnikinnick

A. See C1 Timber Emphasis Mangement Area Standards and Guidelines.

B. The management program shall emphasize fuel reduction, fire surveillance and protection, trespass prevention, and maintenance of a sustained yield timber program. **DC1-001**

C. Regulated timber harvest and timber salvage activities may be permitted. **DC1-002**

D. Fire and fuels management activities shall be conducted at the same level of intensity as within the Bull Run drainage (see DA1 Management Area Standards and Guidelines). **DC1-003**

E. Management activities should achieve appropriate visual quality objectives as viewed form vantage points outside of the Bull Run Watershed Management Unit. **DC1-004**

F. Minerals Management

Common variety minerals (e.g. rock, gravel, and sand) may be permitted. **DC1-005**

G. Road Construction and Maintenance

1. Roads may be constructed, reconstructed and maintained where needed for the protection, utilization, and administration of available resources. **DC1-006**

2. See Forestwide Transportation Systems/Facilities; Travel and Access Management Standards and Guidelines.

H. Utility Corridors

1. New powerlines should be limited to existing corridors. **DC1-007**

2. New powerlines originating from within the Bull Run Management Unit should follow existing road rights-of-way. **DC1-008**

I. Site rehabilitation necessary due to recreational trespass activities should occur. **DC1-009**

Category "E" Management Areas

The E-Series of Management Areas (MAs) represents the Mt. Hood National Forest portion of the Columbia River Gorge National Scenic Area (CRGNSA) designated by the United States Congress in 1986. EA1 Scenic Area MA represents a specially developed management prescription; however, the remaining 9 MAs have management prescriptions largely borrowed from corresponding MAs outside the CRGNSA. For example, EA8 Northern Spotted Owl Habitat Area differs from A8 Northern Spotted Owl Habitat Area only in that it lies within the CRGNSA.

Regulated timber harvest is not allowed within the E-Series MAs; however, timber harvest and/or salvage can in some cases occur. EB2 Scenic Viewshed MA, north of Larch Mountain, allows for planned timber harvest although on an unregulated basis.

• EA1	Scenic Area
• EA4	Special Interest Area
• EA8	Spotted Owl Habitat Area
• EA9	Key Site Riparian
• EA10	Developed Recreation
• EA12	Outdoor Education
• EA13	Bald Eagle Habitat Area
• EB2	Scenic Viewshed
• EB5	Pileated Woodpecker/Pine Marten Habitat Area
• EB7	General Riparian Area

E-Series Columbia River Gorge National Scenic Area

Goal

Protect and provide for the enhancement of the scenic, cultural, recreational, and natural resources of the Columbia River Gorge and to protect and support the economy of the Columbia River Gorge area by encouraging growth to occur in existing urban areas and by allowing future economic development in a manner consistent with purposes of the Columbia River Gorge National Scenic Area Act (1986).

Explanation:

The Columbia River Gorge National Scenic Area E-Series is a conglomerate of Management Areas with a common primary goal as described above. Goal refinements and/or secondary goals are represented by individual Management Areas within the E-Series conglomerate. The Management Area prescriptions vary little from their Management Area counterparts outside the Columbia River Gorge National Scenic Area (CRGNSA). However, they do differ in overall goals, in that, primary goals outside the CRGNSA. The Desired Future Conditions and Standards and Guidelines are also very similar between corresponding Management Areas inside and outside the CRGNSA, e.g. B2 and EB2.

Location statements are described collectively for all the E-Series Management Areas for easy comparison and map reference. Standards and Guidelines are listed separately for each Management Area. The EA1 Scenic Area Management Area does not have a counterpart Management Area outside the CRGNSA, therefore a complete set of Standards and Guidelines is provided. References to counterpart Management Areas outside the CRGNSA are extensively used for the other E-Series Management Areas. However, exceptions and additions accompany the references for each Management Area.

The Practices Table (Table Four-36) also provides a summary of management direction for the E-Series Management Areas.

Location

The E-Series designation applies to National Forest System lands within the Forest boundary which were established as the Columbia River Gorge National Scenic Area by the 1986 Congressional Act. The following Management Area designations, as delineated on the Alternative Q map along with its supplemental maps (see the accompanying map packet), are intended to be fully consistent with the Act.

The E-Series Management Areas encompass an area stretching east and west along the entire northern boundary of the Forest. The Area as a whole reaches from 1 to approximately 4 miles south of the Columbia River.

EA1 Scenic Area

This Management Area, representing the majority of the CRGNSA included within the Forest, is displayed on the Alternative Q map. It provides the basic framework for management direction within the CRGNSA. The other E-Series Management Areas are inclusions within EA1 and prescriptions predominate.

EA4 Special Interest Area

This Management Area is represented by 3 relatively small locations (see Alternative Q map): Oneonta Gorge Botanical Area (10 acres), Larch Mountain Recreation Area (45 acres) and Columbia Gorge-Old Wagon Road (65 acres). The EA4 prescription predominates over other E-Series Management Areas which may overlap, e.g. EB7 General Riparian Area (unmapped).

EA8 Spotted Owl Habitat Area

This Management Area, displayed on the Alternative Q map, is distributed throughout the CRGNSA. The EA8 prescription predominates over the other E-Series Management Areas whenever overlap may occur, e.g. EB7 (unmapped) and EB5 (Wildlife Resources map).

EA9 Key Site Riparian

This Management Area is represented in two locations (see Alternative Q map), i.e. Horsetail-Oneonta Floodplain and in Multnomah Creek Basin. The EA9 prescription predominates over other E-Series prescriptions, e.g. EB7 (unmapped).

EA10 Developed Recreation

This unmapped Management Area is represented by developed campgrounds, trailheads and picnic areas distributed throughout the CRGNSA. The Multnomah Falls Lodge and associated facilities are also included. The EA10 prescription predominates over other E-Series prescriptions except EB7. EA10 and EB7 (unmapped) prescriptions are jointly applied where overlap occurs, e.g. at Eagle Creek Picnic Area and Wyeth Campground.

EA12 Outdoor Education

This Management Area located on Wyeth Bench east of Cascade Locks, is displayed on the Alternative Q map. The EA12 prescription is applied jointly with EB7 (unmapped) where overlap occurs.

EA13 Bald Eagle Habitat Area

This Management Area, displayed on the Wildlife Resources map (a supplement to Alternative Q), is represented by 4 small areas, i.e. one each in the lower reaches of McCord, Moffett, Eagle and Lindsey Creeks. The EA13 prescription is jointly applied with EA8, EB5 and EB7 prescriptions where overlap occurs.

EB2 Scenic Viewshed

This Management Area, displayed on the Alternative Q map, is located on the northeast side of Larch Mountain in the extreme northeastern portion of the Forest (within the Forest boundary). The EB2 prescription is replaced by the EA8 prescription where the SOHA overlaps the viewshed from Larch Mountain and Larch Mountain road. The EB2 prescription is jointly applied with the EB7 prescription where overlap occurs.

EB5 Pileated Woodpecker/Pine Marten Habitat Area

This Management Area, distributed throughout the CRGNSA, is displayed on the Wildlife Resources map (supplement to Alternative Q). The EB5 prescription predominates over the EB2 prescription. Where EB5 overlaps with EA8, EA9 and EA13, the EB5 prescription is subservient. The EB5 prescription is jointly applied with EA1 and EB7 prescriptions.

EB7 General Riparian Area

This unmapped Management Area is distributed throughout the CRGNSA along every stream. The EB7 prescription predominates over the EA1 prescription. EA4, EA8 and EA9 prescriptions predominate over the EB7 prescription where overlaps occur. The EB7 prescription is jointly applied with EA10, EA12, EA13, EB2 and EB5 prescriptions.

Desired Future Condition

Major Characteristics and Physical Features

- Long views of breathtaking natural scenery.
- Many dispersed natural settings used by recreationists.
- Unique combination of geologic, ecologic and hydrologic processes.
- The hand of natural processes dominates the area.
- Developed heavy recreational use areas are localized.
- Much of the recreation experience takes place in a predominately unmodified environment.

Sensory Perceptions

- A feeling of being in a special place.
- Inspirational.
- Sense of awe.

EA1 Scenic Area

A. Recreation Facilities, Use Administration, and Trails

1. All management activities shall be consistent with the Recreation Opportunity Spectrum (ROS) classification of the Columbia River Gorge National Scenic Area. **EA1-**

2. Recreation facilities may occur. **EA1-**

3. Recreation use may be limited when dispersed use exceeds the capacity of the area. **EA1-**

4. Dispersed campsites shall be located to take advantage of topographic and vegetative screening, and shall be located outside of foreground view (i.e. 100 feet) from lakes, streams, trails, and key interest features. **EA1-**

5. Recreational livestock may be tied, grazed or held overnight, or for extended periods of time, within the near-foreground areas (i.e. 100 feet) of dispersed campsites, trails, and key interest areas **EA1-**
    a. Utilization of current year's vegetation growth should not exceed 30 percent (see Forestwide Range Management Standards and Guidelines). **EA1-**
    b. No more than 5 percent of a project area should be in a detrimental soil condition from the combined impact of compaction, puddling and displacement (see Forestwide Soil Productivity Standards and Guidelines). **EA1-**
    c. Exposed mineral soil around campsites, trails and key interest areas should not exceed 25 percent of the activity area. **EA1-**

6. Industrial camping should not be allowed. **EA1-**

7. The trail system should disperse use and provide a range of difficulty levels consistent with the prescribed ROS class. Trails should be maintained consistent with the prescribed ROS class. EA1- EA1-

8. Recreational livestock shall not be tied, grazed, or held overnight within developed recreation sites unless the site is especially designed and designated for livestock use. EA1-

B. Visual Resource Management

1. All management activities shall achieve the visual quality objective (VQO) of Retention as seen from open roads, trails, high recreational use areas, developed recreation facilities and water bodies within the CRGNSA. EA1-

2. See Forestwide Visual Resource Management Standards and Guidelines for VQOs prescribed from trails.

C. Cultural Resources Management

See Forestwide Cultural Resources Management Standards and Guidelines.

D. Wildlife and Fisheries

Wildlife and fisheries habitat improvement activities should be encouraged. EA1-

E. Range

Commercial livestock grazing should not be permitted. EA1-

F. Vegetation Management

1. Regulated timber harvest shall be prohibited. EA1-

2. Nonregulated timber harvest operations necessary to achieve CRGNSA objectives may be allowed, provided no permanent roads are constructed. EA1-

3. Timber salvage activities may occur for protection of special CRGNSA features and to provide for the safety of visitors. Timber salvage activities to harvest windthrown timber, fire damaged trees, insect or disease attacked trees, other similar natural tree mortality, or for the protection of special features, or surrounding forest, may occur provided no permanent roads are constructed. EA1- EA1-

4. Native plant collection may be restricted to protect high value botanic resources. EA1-

5. Native plant collection should be discouraged. EA1-

6. Introduction of non-native plant species shall be discouraged. EA1-

G. Soil, Water and Air Quality

1. See Forestwide Soil Productivity, Water, Riparian Area and Air Quality Standards and Guidelines.
2. Soil and water improvement activities should be encouraged. EA1-

H. Minerals Management

Minerals management activities shall be prohibited. EA1-

Note: The CRGNSA was withdrawn from mineral entry by the CRGNSA Act, 1986.

I. Geology

See Forestwide Geology Standards and Guidelines.

J. Lands and Special Uses

1. New recreation and non-recreation special use permits may be permitted. EA1-
2. Special uses which do not meet Management Area management direction should be phased out. EA1-
3. Energy development activities shall be prohibited. EA1-
4. CRGNSA lands shall be retained. EA1-

K. Transportation Systems/Facilities; Travel and Access Management

1. Existing off-road vehicle tracks inconsistent with the prescribed ROS class shall be blocked, stabilized and returned to a natural condition. EA1-
2. New and existing roads, and associated facilities and structures may occur if consistent with Management Area management direction. EA1-
3. Recreational off-road vehicle use shall be prohibited. EA1-
4. Mountain bicycle use shall be discouraged, but may occur on designated trails. EA1-
5. Pedestrian and equestrian use shall be encouraged. EA1-

L. Fire Prevention and Suppression

See Forestwide Forest Protection Standards and Guidelines.

M. Wood Residue Management

1. See Forestwide Soil Productivity, Wildlife, and Forest Diversity Standards and Guidelines regarding woody debris.
2. Prescribed burning may occur. **EA1-**

N. Integrated Pest Management

1. The suppression and prevention of pests shall be limited to outbreaks which threaten the recreational and special values of the area or adjacent resources. **EA1-**
2. Biological control methods shall be emphasized. **EA1-**

EA4 Special Interest Area

1. See A4 Management Area Standards and Guidelines.
2. Commercial livestock grazing shall be prohibited. **EA4-001**
3. Minerals Management activities shall be prohibited. **EA4-002**
4. Recreational off-road vehicle use shall be prohibited. **EA4-003**
5. Mountain bicycle use shall be prohibited, except on designated trails. **EA4-004**
6. Equestrian use shall be prohibited, except at Larch Mountain. Equestrian use at Larch Mountain shall be discouraged. **EA4-005** **EA4-006**
7. Prescribed fire should not occur. **EA4-007**
8. Application of pesticides shall be prohibited within Oneonta Gorge Botanical Area. **EA4-008**
9. Native plant collection shall be prohibited within Oneonta Gorge Botanical Area. **EA4-009**
10. Introduction of non-native plants shall be prohibited within Oneonta Gorge Botanical Area. **EA4-010**
11. Regulated timber harvest shall be prohibited.
12. Unregulated timber harvest may occur at Larch Mountain to enhance recreation resource values. Unregulated timber harvest shall not occur within Oneonta Gorge or Old Wagon Road. **EA4-011** **EA4-012** **EA4-013**

EA8 Spotted Owl Habitat Area

Spotted owl.

A. See A8 Management Area Standards and Guidelines.

B. Recreational off-road vehicle use shall be prohibited. **EA8-001**

C. Management activities shall achieve a visual quality objective of Retention as seen from open roads, trails, high recreational use areas, developed recreation facilities and water bodies within the CRGNSA. **EA8-002**

D. Commercial livestock grazing shall be prohibited. **EA8-003**

E. Minerals management activities shall be prohibited. **EA8-004**

EA9 Key Site Riparian

A. See A9 Management Area Standards and Guidelines.

B. Management activities shall achieve a visual quality objective of Retention as seen from open roads, trails, high recreational use areas, developed recreation facilities and water bodies within the CRGNSA. **EA9-001**

C. Commercial livestock grazing shall be prohibited. **EA9-002**

D. Minerals management activities shall be prohibited. **EA9-003**

E. Unregulated timber harvest may occur only to protect or enhance riparian resource values. **EA9-004**

EA10 Developed Recreation

Wahkeena Falls

A. See A10 Management Area Standards and Guidelines.

B. Management activites shall achieve a visual quality objective of Partial Retention as viewed from open roads, trails, high recreational use areas, developed recreation facilities and water bodies within the CRGNSA. **EA10-001**

C. Recreational use may occur within inventoried deer and elk winter range (Map Four-4) between December 1 and April 1. **EA10-002**

D. Commercial livestock grazing shall be prohibited. **EA10-003**

E. Minerals management activities shall be prohibited. **EA10-004**

F. Equestrian use shall be encouraged at Herman Creek campground. **EA10-005**

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EA12 Outdoor Education Area

Smokey Bear, with friends.

A. See A12 Management Area Standards and Guidelines.

B. Minerals management activities shall be prohibited. **EA12-001**

EA13 Bald Eagle Habitat Area

A. See A13 Management Area Standards and Guidelines.

B. Management activities shall achieve a visual quality objective of Retention as viewed from open roads, trails, high recreational use areas, developed recreation facilities and water bodies within the CRGNSA. **EA13-001**

C. Commercial livestock grazing shall be prohibited. **EA13-002**

D. Minerals management activities shall be prohibited. **EA13-003**

E. Recreational off-road vehicle use shall be prohibited. **EA13-004**

EB2 Scenic Viewshed

Canoeists on Trillium Lake.

A.	See B2 Management Area Standards and Guidelines.	
B.	Management activities shall achieve visual quality objectives of Retention in foreground areas and Partial Retention in middleground and background areas as viewed from open roads, trails, high recreational use areas, streams, CRGNSA and the Portland Metropolitan Area.	**EB2-001**
C.	Commercial livestock grazing shall be prohibited.	**EB2-002**
D.	Regulated timber harvest shall be prohibited.	**EB2-003**
E.	Unregulated timber harvest should be encouraged.	**EB2-004**
F.	Recreational off-road vehicle use shall be prohibited.	**EB2-005**
G.	Locatable and leaseable minerals development activities shall be prohibited.	**EB2-006**

H.	Common variety minerals (e.g. sand and gravel) development may occur. New or expanded rock quarries and stockpiles shall not be located in areas with prescribed visual quality objectives of Retention. These developments shall not dominate over natural form, line, color or texture of the characteristic landscape.	EB2-007 EB2-008 EB2-009
I.	Signing should be limited to the minimum quantity consistent with public service and safety, and be located and designed to be consistent with the CRGNSA Sign Guides.	EB2-010

EB5 Pileated Woodpecker/Pine Marten Habitat Area

A.	See B5 Management Area Standards and Guidelines.	
B.	Off-road vehicle use shall be prohibited.	**EB5-001**
C.	Management activities shall achieve a visual quality objective of Retention, within all distance zones, as viewed from open roads, trails, high recreational use areas, developed recreation facilities and water bodies within the CRGNSA.	**EB5-002**
D.	Commercial livestock grazing shall be prohibited.	**EB5-003**
E.	Regulated timber harvest shall be prohibited.	**EB5-004**
F.	Minerals management activities shall be prohibited.	**EB5-005**

EB7 General Riparian Area

Devils club.

A. See B7 Management Area Standards and Guidelines.

EB7-001

B. Recreational off-road vehicle use shall be prohibited.

[illegible]002

C. Management activities shall achieve a visual quality objective of Retention, within all distance zones, as viewed from open roads, trails, high recreational use areas, developed recreation facilities and water bodies (stream courses, lakes and wetlands) within the CRGNSA.

EB7-003

D. Commercial livestock grazing shall be prohibited.

EB7-004

E. Regulated timber harvest shall be prohibited.

EB7-005

F. Unregulated timber harvest should occur where EB7 is an inclusion within EB2.

EB7-006

G. Minerals management activities shall be prohibited.

Practices

Table Four-6 displays the status of management "practices" expected within Category A Management Areas. Table Four - 7 displays practices within Category B and C MAs and Table Four - 8 displays practices within the Bull Run Watershed Management Unit D-Series MAs. Table Four - 9 displays practices anticipated in the Columbia River Gorge National Scenic Area.

Four descriptors are used to describe the status of each practice in each MA, i.e. encourage (E), accept (A), discourage (D) and prohibit (P). The descriptors are intended to be consistent with the Forestwide and MA Standards and Guidelines. In many cases, the Standards and Guidelines provide some flexibility for field implementation level interpretation; where this occurs the closest descriptor is displayed and an asterisk is added. The asterisk is intended to direct the reader to the Standards and Guidelines for greater clarity. If conflicts exist between the Standards and Guidelines and the practices tables, the Standards and Guidelines predominate.

In many cases the Standards and Guidelines do not speak to a specific practice. When this occurs, the descriptor (i.e. encourage, accept, discourage, or prohibit) included in the practices table provides generalized management direction.

The following list of management practices are expected to occur on a Forestwide basis, consistent with MA management direction:

- Noxious weed control
- Resource inventories
- Cultural resource site excavations
- Travel and access management
- Facility construction
- Fire protection (prevention, suppression and rehabilitation)
- Land ownership adjustment
- Law enforcement
- Resource monitoring
- Road maintenance (i.e. in MAs where roads are permitted)
- Trail maintenance

Table Four - 33 Status of Management Practices Within Category A Management Areas

	A2 Wilderness	A3 Research Natural Area	A4 Special Interest Area	A5 Unroaded Recreation	A6 Semi-Primitive Roaded Recreation	A7 Special Old Growth	A8 Northern Spotted Owl	A9 Key Site Riparian	A10 Developed Recreation	A11 Winter Recreation Area	A12 Outdoor Education Area	A13 Bald Eagle Recovery Area
Recreation												
Trail Construction	A*	D*	E	E	E	A	D*	D*	E	A*	A	D*
Campground Developed Site Construction	P	P	A	D	A	A	P*	D*	E	A*	E	P
Dispersed Camping	A*	D*	A	E	E	D	D	A	D*	A*	D	D*
Interpretive Site	P	P	E	D	A	E	D	A*	E	A*	E	D
Special Uses	A*	P	A	A	A	D	D	D	D	E	D	P
Ski Areas	P	P	D	P	P	P	P	P	D	E	P	P
Site Rehabilitation	E	A	E	E	E	A	A	E	E	E	E	A
Wildlife/Fish Habitat												
Structural Improvments	D	P*	A	A	A	E*	E*	E*	A	A	E	A*
Nonstructural Improvments	A*	D	A	A	A	A*	E*	E*	A	A	E	A*
Range												
Livestock Grazing	A*	P*	D*	A*	A*	A*	A*	D	P*	A*	P	A*
Livestock Structural Improvments	P	P*	E*	A	A	D*	D*	E*	A	A	A	D*
Nonstructural Improvements	P	P	D	D	D	D	P	P	P	D	D	D
Timber												
Regulated Harvest Activities	P	P	P	P	P	P	P	P	P	P	P	P
Site Preperation	P	P*	A	A	A	D	P	A*	A	A	A*	A*
Reforestation Activities	P	P*	A	A	A	D	P	A*	A	A	A*	A*
Pre-Commercial Thinning	P	P*	D	D	D	P	P*	P	D	A	A*	A*
Fertilization	A	P*	A	A	A	D	P*	D	A	A	A*	A*
Pruning	P	P*	D	D	D	D	P	P	A	A	A*	A*
Pesticide Use	D*	P*	D*	A*	A*	A*	D*	D*	A	A	A*	D*

	A2 Wilderness	A3 Research Natural Area	A4 Special Interest Area	A5 Unroaded Recreation	A6 Semi-Primitive Roaded Recreation	A7 Special Old Growth	A8 Northern Spotted Owl	A9 Key Site Riparian	A10 Developed Recreation	A11 Winter Recreation Area	A12 Outdoor Education Area	A13 Bald Eagle Recovery Area
Genetic Tree Improvment	P	P	D	D	D	D	D	A	A	A	A	D
Commercial Thinning	P	P*	D	D	D	P	P*	P	P	A	A*	A*
Commercial Special Forest Products	P	P	D	A	A	P	P	D	P	D	D	D
Unregulated Harvest Activities	P	P*	D*	D	D	P*	P	D*	A	A	A*	A*
Soil - Water - Air												
Structural Improvments	A*	P*	A	A	A	A	A	A	E	E	E	A
Nonstructural Improvments	A*	D*	A	A	A	A	A	E	E	E	E	A
Minerals												
Common Variety Resource Development	P	P	P	P	D	P	D*	P	P	P*	P	D*
Leaseable Resource Development	P*	P*	P*	A*	A*	A	D*	D*	P*	P*	D	D*
Locatable Resource Development	P*	P*	P*	A*	A*	A	D*	D*	P*	P*	D	D*
Special Uses												
Nonrecreation Special Uses	P*	D*	A*	A*	A	D	D	D	D	A	D	P*
Transportation												
Road Construction	P	D*	A	P*	A	A*	D*	D*	A	A	A*	D
Road Closures	E*	E	A	E	A	A	E	E	A	A	A	E
Fire												
Prescribed Fire	A	A*	A	A	A	A*	D*	E*	D*	A	A	A*

E = Encouraged *P = Prohibited*

A = Accept *D = Discouraged*

** Exceptions may exist, refer to Standards and Guidelines for further clarification*

Table Four - 34 Status of Management Practices Within Categories B & C Management Areas

	B1 Designated W,S&R Rivers	B2 Scenic Viewshed	B3 Roaded Recreation	B4 Pine Oak Habitat Area	B5 Pileated Woodpecker/Pine Marten	B6 Special Emphasis Watershed	B7 General Riparian Area	B8 Earthflow Area	B9 Wildlife/Visual Area	B10 Winter Range	B11 Deer & Elk Summer Range	B12 Back Country Lakes	C1 Timber Emphasis Area
Recreation													
Trail Construction	E	E	E	A	D	A	A*	A*	A	A*	A*	E	A
Campground Developed Site Construction	P/A*	A	E	A*	P	A	A	A*	P	A*	D	A	A
Dispersed Camping	E*	E*	E	A*	D	E*	A*	A*	A	A*	A*	A*	A
Interpretive Site	D/E*	E	E	E	D	E	E	E	A	A	A	A	E
Special Uses	A	A	A	D	D	A	D	D	A*	A	A*	D	A
Ski Areas	A	P	P	P	P	D	P	P	P	P	P	P	D
Site Rehabilitation	E	E	E	E	A	E	E	E	E	E	E	E	E
Wildlife/Fish Habitat													
Structural Improvments	A*	A	A	E	E*	E	E	E	E	E	E	E	E
Nonstructural Improvments	A*	A	A	E	A	E	E	E	E	E	E	A	E
Range													
Livestock Grazing	A*	A*	P	A*	A*	A*	D	A*	A*	A*	A*	D	A*
Livestock Structural Improvments	A*	A*	P	E	D*	A*	A*	A*	A	E	A	A*	A
Nonstructural Improvements	A	A	P	D	P	A*	P	A*	A	E	A	D	A
Timber													
Regulated Harvest Activities	A*	A	A	A	A*	A	A/P	A	A	A	A	A	E
Site Preperation	A*	A	A	A	A	A	A	A	A	A	A	A	E
Reforestation Activities	A*	E	E	E	E	E	E	E	E	E	E	E	E
Pre-commercial Thinning	A*	A	A	A	A	A	A*	A*	A*	A*	A	A	E
Fertilization	A*	A	A	A*	A	A*	D	A	A	A	A	A	E
Pruning	A*	A	A	A	P	A	D	A	A	A	D	A	A

	B1 Designated W,S&R Rivers	B2 Scenic Viewshed	B3 Roaded Recreation	B4 Pine Oak Habitat Area	B5 Pileated Woodpecker/Pine Marten	B6 Special Emphasis Watershed	B7 General Riparian Area	B8 Earthflow Area	B9 Wildlife/Visual Area	B10 Winter Range	B11 Deer & Elk Summer Range	B12 Back Country Lakes	C1 Timber Emphasis Area
Pesticide Use	A*	A	A	A	D*	A*	D*	A	A	A	A	A	A
Genetic Tree Improvment	A*	A	A	A	D*	A	A	A	A	A	A	A	E
Commercial Thinning	A*	A	A	A	A*	A	D	A*	A	D	A	A	E
Commercial Special Forest Products	A*	A	A	A	D	A	A	A	A	A	D	A	E
Unregulated Harvest Activities	A	A	A	A	A	A	A	A	A	A	A	A	E
Soil - Water - Air													
Structural Improvments	A*	E	E	A	A	E	E	E	E	A	A	A	E
Non Structural Improvments	A*	E	E	E	A	E	E	E	E	A	A	A	E
Minerals													
Common Variety Resource Development	P*	P*/A	D*	A*	P	A	D	A	A*	A*	A*	D*	A
Leaseable Resource Development	P/A	D*/A	A*	A*	A*	A	A*	A	A	A*	A*	A*	A
Locatable Resource Development	P	D*/A	A*	A*	A*	A	A*	A	A	A*	A*	A*	A
Special Uses													
Nonrecreation Special Uses	D*	A*	A	A*	D	A	D*	A*	A*	A	A*	D	A
Transportation													
Road Construction	P/D/A	A	A	A*	A*	A*	D*	A*	A*	A*	A*	A*	A
Road Closures	E/A*	A	A	E	E	A	E	A*	E	E	E	A	A
Fire													
Prescribed Fire	A	A*	A	E	A*	A*	A	A	E	E*	E*	A	A

E = *Encouraged* P = *Prohibited*

A = *Accept* D = *Discouraged*

*** Exceptions may exist, refer to Standards and Guidelines for further clarification***

Table Four - 35 Status of Management Practices Within the Bull Run Watershed D Series MAs

	DA1 Bull Run Physical Drainage	DA2 BR North Buffer No Regulated Timber	DA3 BR Research Natural Area	DA8 BR Northern Spotted Owl	DA9 BR Key Site Riparian	DA13 BR Bald Eagle Recovery Area	DB2 BR Scenic Viewshed	DB5 BR Pileated Woodpecker/Pine Marten	DB7 BR General Riparian Area	DB8 BR Earthflow Area	DC1 BR Timber Emphasis Area
Recreation											
Trail Construction	P	P*	P	P*	P	P	P	P	P	P	P*
Campground Developed Site Construction	P	P	P	P	P	P	P	P	P	P	P
Dispersed Camping	P	P	P	P	P	P	P	P	P	P	P
Interpretive Site	P	P	P	P	P	P	P	P	P	P	P
Ski Areas	P	P	P	P	P	P	P	P	P	P	P
Site Rehabilitation	P*	P*	P*	P*	P	P	P	P	P	P	P
Wildlife/Fish Habitat											
Structural Improvments	E	D	P*	E*	A	A	A	E	E	A	E
Nonstructural Improvments	E	A	P*	A	E	A	A	A	E	E	E
Range											
Livestock Grazing	P	P	P	P	P	P	P	P	P	P	P
Livestock Structural Improvments	P	P	P	P	P	P	P	P	P	P	P
Nonstructural Improvements	P	P	P	P	P	P	P	P	P	P	P
Timber											
Regulated Harvest Activities	P	P	P	P	P	P	A	P*/A*	P*/A*	A	A
Site Preperation	A	A	P	P	P	P	A	A	A	A	A
Reforestation Activities	E	A	P	P	P	P	E	E	E	E	E
Pre-Commercial Thinning	A	A	P	P	P	P	A	A	D	A	E
Fertilization	P	D	P	P	P	P	A	P*/A*	P*/A*	A	E
Pruning	D	D	P	P	P	P	D	P	P	A	A
Pesticide Use	P	D	P	P	P	P	D	P*/A*	P*/A*	D	D
Genetic Tree Improvment	A	A	P	P	P	P	A	A	A	A	A
Commercial Thinning	A	P	P	P	P	P	A	A	D	A	A

	DA1 Bull Run Physical Drainage	DA2 BR North Buffer No Regulated Timber	DA3 BR Research Natural Area	DA8 BR Northern Spotted Owl	DA9 BR Key Site Riparian	DA13 BR Bald Eagle Recovery Area	DB2 BR Scenic Viewshed	DB5 BR Pileated Woodpecker/Pine Marten	DB7 BR General Riparian Area	DB8 BR Earthflow Area	DC1 BR Timber Emphasis Area
Commercial Special Forest Products	D	D	P	P	P	P	D	P	D	D	D
Unregulated Harvest Activities	A	A	P	P	A*	A*	A	A	A	A	A
Soil - Water - Air											
Structural Improvments	E	A	P*	E	A	E	A	E	E	E	E
Nonstructural Improvments	E	A	P*	E	E	E	A	E	E	E	E
Minerals											
Common Variety Resource Development	A*	A	P	P	P	P	A	D	D	D	A
Special Uses											
Recreation Special Uses	P	P*	P	P*	P	P	P	P	P	P	P*
Nonrecreation Special Uses	D*	D	P	D	D	D	D	D	D	D	D
Transportation											
Road Construction	A	D	P	D	P	D	A	D	D	D	A
Road Closures	E	E	E	E	E	E	E	E	E	E	E
Fire											
Prescribed Fire	A	A	P*	D	A	A	A	A	A	A	A

E = Encouraged P = *Prohibited*

A = *Accept* D = *Discouraged*

** Exceptions may exist, refer to Standards and Guidelines for further clarification*

Table Four - 36 Status of Management Practices Within the Columbia River Gorge National Scenic Area E Series MAs

	EA1 Scenic Area	EA4 Special Interest Area	EA8 Northern Spotted Owl Habitat Area	EA9 Key Site Riparian	EA10 Developed Recreation	EA12 Outdoor Education Area	EA13 Bald Eagle Recovery Area	EB2 Scenic Viewshed	EB5 Pileated Woodpecker/ Pine Marten Habitat Area	EB7 General Riparian Area
Recreation										
Trail Construction	E	A	A	D	E	A	D	A	D	A*
Campground Developed Site Construction	A	A	P	P	E	A	D	A	D	A*
Dispersed Camping	E	D	A	D	A*	A	D	A	D	A
Interpretive Site	E	E	D	A	E	E	D	E	D	E
Ski Areas	D	D	D	P	D	P	P	D	P	P
Site Rehabilitation	E	E	A	A	E	E	A	E	A	E
Wildlife/Fish Habitat										
Structural Improvments	E	A	E	A	A	E	A	A	E*	E
Nonstructural improvments	E	A	A	E	A	E	A	A	A	E
Range										
Livestock Grazing	P	P	P	P	P	P	P	P	P	P
Livestock Structural Improvments	P	P	P	P	P	P	P	P	P	P
Nonstructural Improvements	P	P	P	P	P	P	P	P	P	P
Timber										
Regulated Harvest Activities	P	P	P	P	P	P	P	P	P	P
Site Preperation	A	A	P	A	A	A	A*	A	A	A
Reforestation Activities	A	A	P	A	A	A	A*	E	E	E
Pre-Commercial Thinning	A	A	P	P	D	A	A*	A	A*	D
Fertilization	A	A	P	D	A	A	A*	A	A*	D
Pruning	A	A	P	D	A	A	D	A	P	D
Pesticide Use	A	D*	D	D	A	A	D	A	D*	D
Genetic Tree Improvment	A	A	D	D	A	A	A*	A	D*	A

	EA1 Scenic Area	EA4 Special Interest Area	EA8 Northern Spotted Owl Habitat Area	EA9 Key Site Riparian	EA10 Developed Recreation	EA12 Outdoor Education Area	EA13 Bald Eagle Recovery Area	EB2 Scenic Viewshed	EB5 Pileated Woodpecker/ Pine Marten Habitat Area	EB7 General Riparian Area
Commercial Thinning	A	A	D*	P	P	A	A*	A	D	D
Commercial Special Forest Products	A	D	D	D	P	D	D	A	A*	A
Unregulated Harvest Activities	A*	D	P	D*	A	A	A*	E	P	D
Soil - Water - Air										
Structural Improvments	E	A	A	A	E	E	A	A	A	E
Nonstructural Improvments	E	A	A	E	E	E	A	A	A	E
Minerals										
Common Variety Resource Development	P	P	P	P	P	P	P	P	P	P
Leaseable Resource Development	P	P	P	P	P	P	P	P	A	P
Locatable Resource Development	P	P	P	P	P	P	P	P	A	P
Special Uses										
Recreation Special Uses	A	A	D	D	D	A	D	A	D	D
Nonrecreation Special Uses	A	D	D	D	D	D	P*	A	D	A
Transportation										
Road Construction	A	D	D	D	A	A*	D	A	A*	D
Road Closures	A	A	E	E	A	A	E	A	E	E
Fire										
Prescribed Fire	A	A	D	A	D*	A	A*	A	A*	A

E = Encouraged P = *Prohibited*

A = *Accept* D = *Discouraged*

* *Exceptions may exist, refer to Standards and Guidelines for further clarification*

Chapter 5

Implementation of the Forest Plan

Chapter 5

Implementation of the Forest Plan

Biologists review spotted owl field notes.

Introduction

Implementation of the Forest Plan requires moving from an existing management program with a budget and targets for accomplishment to a new management program with a budget,goals, and objectives that will provide a different way of addressing the issues and concerns people have voiced about management of the Forest. This Forest Plan establishes the direction for the Mt. Hood National Forest for the next 10 to 15 years. It will be used in conjunction with Forest Service Manuals and Handbooks and the Pacific Northwest Regional Guide.

This chapter of the Plan includes three sections: Implementation Direction, Monitoring and Evaluation, and Amendments and Revisions. Collectively, these sections explain how management direction will be implemented, how implementation activities will be monitored and evaluated, and how the Plan will be kept current as conditions change and new information becomes available.

Implementation Direction

The Forest Supervisor has the overall responsibility for implementing the Forest Plan. Implementation will occur through the identification, selection, scheduling, and execution of management practices designed to meet the management direction of the Plan. Implementation will also involve responding to proposals by others for use and/or occupancy of Forest lands. Additionally, it will be necessary for other plans or instruments, budget proposals, and environmental analysis required for implementation of specific management practices to be consistent with this Plan.

The management direction in this Forest Plan was developed prior to the U.S. Fish and Wildlife Service's (FWS) listing, effective July 23, 1990, of the northern spotted owl as threatened and subsequent anticipated development of a recovery plan for the owl. Implementation of this Forest Plan will comply with the Endangered Species Act, as interpreted through consultation with the FWS, any interim management guidance, and eventually the recovery plan.

Pending enactment of new legislation, any applicable actions by the Endangered Species Committee, adoption of a recovery plan by the Fish and Wildlife Service, or the results of further consultation between the Forest Service and the Fish and Wildlife Service, all management activities will be conducted in a manner not inconsistent with the Interagency Scientific Committee recommendations.

Project Scheduling

The schedule of proposed and possible projects for the first decade is contained in the appendices of this document. Projects necessary to accomplish the goals and objectives of the Plan are scheduled through a process which takes Forest-wide outputs and activities and locates them to more site-specific areas on the Ranger Districts.

Projects are selected based on public issues, management concerns, resource opportunities, quality of the environment, major outputs, and management's costs. Line Officers and Resource specialists will determine priorities and select projects through an annual process.

Projects are scheduled in response to the planned output of goods and services and the annual budgeting process. All projects will comply with National Environmental Policy Act requirements and with the Standards and Guidelines of this Forest Plan.

Project scheduling will be available for review at the Ranger District offices and the Supervisor's Office. Schedules of possible projects will routinely change as projects are implemented or are removed from the listings for other reasons, and as new projects take their place. Adjustment to the schedule may be made based on budgets and other unforeseen events. Changes to project schedules are not to be considered Forest Plan amendments.

Project Planning

The management direction provided by this Forest Plan comprises the framework within which project planning and activities take place. It defines management area goals and management standards that guide project activities toward achieving a desired future condition for the Management Area and, collectively, for the Forest. It specifies a schedule for project activities. It provides guidance concerning potential land and habitat limitations, including assumptions about the appropriate vegetation management practices for timber sale projects. Site-specific project level analysis verifies the appropriateness of those assumptions.

Within this guidance, projects are developed to most efficiently and effectively accomplish management goals and objectives. Project environmental analyses provide an essential source of information for Forest Plan monitoring. First, as project analyses are completed, new or emerging public issues or management concerns may be identified. Second, the management direction designed to facilitate achievement of the Management Area goals are validated by the project analyses. Third, the site-specific data collected for project environmental analyses serve as a check on the appropriateness of the land allocation. The information included in the project environmental analyses is used as part of the monitoring process to determine when changes should be made in the Forest Plan.

It is important to note that project or area analysis is focused on the desired future condition for the management area involved. Area analysis will often be done to assure integration of projects that might occur in the same general area. In addition, the public will continue to be involved in subsequent Plan implementation activities.

Consistency With Other Documents and Instruments

This Forest Land and Resource Management Plan establishes the land and resource direction for the Mt. Hood National Forest for the next ten to 15 years. Upon implementation, this Plan shall supersede many plans which are currently in place on the Forest. Some plans will continue unchanged. Outstanding plans, permits, contracts, cooperative agreements, other instruments for occupancy, and use of lands included in the Forest Plan shall be revised to bring them in compliance with this Plan subject to the valid existing rights of the parties involved as soon as practicable (generally within three years) as provided by 36 CFR 219.10 (e) and 36 CFR 219.29 (a), or as specified in the standards presented in Chapter 4 of this Plan.

Table Five-1 shows which existing Forest Plans are to be continued unchanged, continued with revision, or superseded upon the adoption of this Plan.

Table Five-1 Status of Existing Plans Under the Forest Land and Resource Management Plan

Plans to be Maintained *	Plans to be Revised, Then Maintained	Plans to be Superseded
Planning Unit Plans		
Bull Run FEIS		Mt. Hood Planning Unit
		Huckleberry EIS
		Badger-Jordan
		Dalles Municipal Watershed
		Roaring River/Salmon River EIS
		Eagle Creek Watershed
District Multiple Use Plans		
		All Districts
Range Allotment Plans		
Long Prairie		Roaring River
White River		Horsetail
Wapinitia		Highrocks
Clackamas Lake		
Badger & Grasshopper Coordinated Resource Plans		
Resource Plans		
Rock Resource	Geothermal Leasing Analysis	
Forest Noxious Weed	Road Maintenance	
Ownership Adjustment		
	Bagby Research Natural Area	
Timber Plans		
	Tree Improvement Program	Forest Timber Management Plan
Fire Management Plans		
Forest Aviation	Fire Management Action Plan	
Recreation Plans		
Columbia Gorge Outreach		Eagle Creek Limited Area
Timberline Interpretative	Off-Road Vehicles	Timothy Lake Area
	Visitor Information Service	
Ski Area Master Plans		
Mt. Hood Meadows Ski Area FEIS	Multipor Ski Bowl	
Timberline Lodge FEIS		
Special Interest and Unusual Interest Area Plans		
	Bagby Hot Springs Geological Area	Bull of the Woods Scenic Area**

Plans to be Maintained *	Plans to be Revised, Then Maintained	Plans to be Superseded
	Little Crater Lake Geologic Area Olallie Lake Scenic Area Parkdale Lava Beds Unusual Interest Area Sugar Pine Unusual Interest Area	
Historic Area Plans		
Clackamas Lake Ranger Station Historic Site Management	Columbia Gorge "Old" Wagon Road Barlow Tollgate Historic Area Barlow Road Management	Cloud Cap Inn Unusual Interest Area
Recreation Trail Plans		
Pacific Crest National Scenic Trail	District Trail Development Management (one per District)	

**** When the Management Plan for the Columbia River Gorge National Scenic Area is adopted by the Columbia River Gorge Commission, the Forest Plan will be amended to incorporate the management direction outlined in that plan.***

Budget Proposals

The Plans' scheduled projects are translated into multi-year program budget proposals that identify needed expenditures. The schedule is used for requesting and allocating the funds needed to carry out the planned management direction. Upon approval of a final budget for the forest, the annual program is the incremental implementation of the management direction of the Forest Plan. Outputs and activities in individual years may vary significantly, depending on final annual budgets.

The Forest Supervisor may change proposed implementation schedules to reflect differences between proposed annual budgets and actual funds received. Such schedule changes shall not be considered an amendment to the Forest Plan or require preparation of another EIS, unless the changes significantly alter the long-term relationship between levels of multiple-use goods and services projected under the planned proposals as compared to those projected under the actual appropriations.

Upon approval of the final budget for the Forest, the annual program of work is adjusted to the final budget and then carried out. Accomplishment of the annual program of work results in the incremental implementation of the Plan management direction.

Environmental Analysis

Projects and activities permitted through this Plan are subject to analysis under the NEPA process as they are planned for implementation. If the environmental analysis for a project shows that: (a) the management area prescriptions, standards and guidelines can be compiled with, and (b) little or no environmental effects are expected beyond those identified and documented in the Forest Plan Final EIS, the analysis could result in a categorical exclusion. This means that an analysis will not necessarily be documented in the form of an environmental assessment or environmental impact statement.

If an analysis reveals that a proposed action was inconsistent with Plan direction, one of three possibilities result. The first is not doing the action; second, revising it to comply with the Plan; or third, amend or revise the Forest Plan so that the action is consistent.

Monitoring and Evaluation Program

Monitoring and evaluation will provide the public, the Regional Forester, and Forest officials with information on the progress and results of implementing the Forest Plan. Actual effects and activities will be compared to projected effects and Forest Plan direction. Where effects and activities are congruent with expectations, the determination will be documented and implementation will continue. Where effects and activities are not congruent with expectations, further evaluation will occur and appropriate action will be taken to correct inadequacies or to modify the Forest Plan where necessary.

The overall objectives of the Monitoring Plan are to determine if programs and projects are meeting Forest Plan direction, and to keep the Plan viable.

Specific objectives of the monitoring and evaluation program are to determine whether:

- Planned goals and objectives are achieved.
- Programs and activities address existing and emerging public issues and management concerns.
- Standards and guidelines are being followed.
- Standards and guidelines maintain environmental quality.
- Resource and cost information used in projecting output and impacts are correct.
- The Forest Plan needs to be amended or revised.
- Intensity of monitoring is commensurate with the risks, costs and values involved in meeting plan objectives.

Monitoring

Monitoring will test resolution of the same ICOs that the Forest Plan was designed to resolve. For each ICO there are one or more monitoring questions which will be answered at specific time intervals. Table Five-2 lists these monitoring questions by resource. The questions will provide a periodic comparison of the end results of implementation and those projected in the Plan.

Table Five-2 displays the actions, effects, or resources to be measured in the Monitoring and Evaluation Program governing implementation of the Forest Plan.

While the monitoring questions are designed to be clear about what outcome is being tested, they are purposely phrased to allow flexibility in sampling procedures. This will allow monitoring personnel to tailor the design of the monitoring activities to special management concerns at the time of sampling, and to current developments in sampling and analysis procedures.

Three types of monitoring will be used:

- Implementation Monitoring: Did we do what we said we would do in the Plan for a given issue?
- Effectiveness Monitoring: Did the practice or activity provide what we wanted?
- Validation Monitoring: Are the basic assumptions about cause/effect relationships accurate?

The results and trends of monitoring will be described in a monitoring report, and will be evaluated and summarized periodically.

The Monitoring Plan consists of the following components:

Evaluation Question

Identification of the item or resource component being monitored.

Measured Actions/Effects

A specific statement of what will be examined.

Methods

The specific method on how the monitoring will be accomplished.

Units of Measure

Units to be measured or produced.

Estimated Reliability

Self-explanatory.

Collection Frequency

The time period showing how often the item will be monitored.

Report Period

Self-explanatory.

Management Responsibility

Self-explanatory.

Threshold of Variability

The variation from the expected outputs, or activities that is permitted before corrective action or further evaluation is taken.

Annual Cost

The cost included is the minimum anticipated cost of conducting the monitoring for that item.

Items to be Monitored

- **Fisheries**
- **Water/Aquatic Resources**
  - Best Management Practices
  - Bull Run Watershed Management Unit
  - Cumulative Watershed Effects
  - Lakes
  - Wetlands
- **Geology**
- **Minerals**
- **Soil Productivity**
- **Long Term Soil Productivity**
- **Cultural Resources**
- **Economic and Social**
- **Allotment Status**
- **Noxious Weeds**
- **Timber**
  - Catastrophic Changes
  - Diversity
  - Earned Harvest Factor
  - Harvest
  - Harvest Methods
  - Management
  - Modeling Assumptions
  - Old Growth
  - Silviculture
- **Air Quality**
- **Fire Protection**
- **Visual Resources**
- **Wildlife**
  - Bald Eagle
  - Peregrine Falcon
  - Primary Cavity Excavators
  - Winter Range
  - Pine Marten and Pileated Woodpecker
  - Pine Oak
  - Northern Spotted Owl
  - Summer Range
  - T,E & S Plants

- Visual
- Riparian Terrestrial Habitat Effectiveness

Recreation

- Developed Recreation
- Recreation Opportunity Spectrum
- Roadless Areas
- Special Interest Areas
- Trails
- Wilderness
- Wild and Scenic Rivers
- Off-Road Vehicle Use

Transportation

- Road Construction and Reconstruction
- Road Closures
- Road Management
- Road Maintenance

Research Natural Areas

Table Five-2 Monitoring Plan

Monitoring Element: Fisheries

Question: Are Standards and Guidelines effective in maintaining or enhancing aquatic habitat complexity?

Discussion: A baseline of aquatic habitat conditions across the Forest needs to be established to determine if Standards and Guidelines are accomplishing stated goals and desired future conditions. Plan to survey 150 miles/year with expectation of completing Forest in eight years.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are standards and guidelines effective in maintaining or enhancing aquatic habitat complexity?	Changes in quality and quantity of aquatic habitat	In-stream measurement (Hankin-Reeves Method)	Number of pieces of large woody debris	High	Annually	Annually	District Rangers	Less than 90% of in-channel LWD per stream segment	$85,000
		Hankin-Reeves Method	Volume of pools	Moderate	Annually			25% decrease in pool volume/ stream segment	
		Hankin-Reeves Method	Freq. of pools	High	Annually			5% decrease in pool frequency	
		McNeil Kelly/ Deftman Hoop Method	Sediment Embeddedness	High	Annually			More than 25% embeddedness	
		Hankin-Reeves Method	% of streambank stability	Moderate	Annually			>5% decrease in streambank stability	
		Surber-Mangum Method	Sediment-Sensitive Macroinvertebrates	High	Annually			Less than 200 insects/ square meter	
Are standards and guidelines effective in maintaining or enhancing fish habitat capability?	Changes in fish habitat capability	Cooperative effort with ODFW to determine changes in fish producing capability	SHCI LTHCI	Moderate Moderate	Annually		RGEW Staff	More than a 20% decrease in index for drainage/ subdrainage or lake	$15,000

Table Five-2 Monitoring Plan

Monitoring Element: Water/Aquatic Resources - Best Management Practices

Question: Are water-related standards and guidelines, including Best Management Practices (BMPs), effective for maintaining or enhancing water quality and ensuring compliance with State water quality requirements?

Discussion: The Forest is mandated by the Federal Clean Water Act (CWA) to comply with State water quality requirements. A Memorandum of Understanding between the Oregon Department of Environmental Quality and USDA, Forest Service recognizes BMPs as the primary mechanism for achieving water quality standards.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are water resource-related BMPs and associated standards and guidelines being implemented?	Identification and application of appropriate BMPs	Review and documentation of appropriate BMPs in project planning documents and project implementation	Projects Annual BMP Report)	Good	Continuous, on-going	Annually	Watershed Staff	100% of all appropriate BMPs and standards and guidelines are implemented	$40,000 includes training, document review, project review, etc. (see worksheet)
Are water resource-related standards and guidelines and BMPs effective for maintaining or enhancing water quality and beneficial uses of water?	Changes in water quality (e.g. turbidity, temperature) and channel characteristics/ condition	Visual observations/ measurements; extensive and intensive sampling for turbidity/ temperatures; stream surveys/ channel condition measurements	Variable, depending on parameter	Good	Continuous and/or seasonally depending on parameter	Annually	Watershed Staff	Decreasing trends in water quality, channel stability, and aquatic habitat (e.g. increased channel aggredation, bank scour, pool filling, etc.)	$150,000 first year; $120,000 thereafter

Table Five-2 Monitoring Plan

Monitoring Element: Water/Aquatic Resources - Best Management Practices (continued)

Question: Are water-related standards and guidelines, including Best Management Practices (BMPs), effective for maintaining or enhancing water quality and ensuring compliance with State water quality requirements?

Discussion: The Forest is mandated by the Federal Clean Water Act (CWA) to comply with State water quality requirements. A Memorandum of Understanding between the Oregon Department of Environmental Quality and USDA, Forest Service recognizes BMPs as the primary mechanism for achieving water quality standards.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are water resource-related standards and guidelines and BMPs effective in ensuring compliance with State water quality requirements?	Changes in water quality (e.g. turbidity, temperature) and channel characteristics/ condition	Visual observations/ measurements; extensive and intensive sampling for turbidity/ temperature; stream surveys/ channel condition measurements	Variable, depending on parameter	Good	Continuous and/or seasonally depending on parameter	Annually	Watershed Staff	Any decrease in the water quality of designated Wild and Scenic Rivers. Water temperatures in excess of 58°F, or any increase above naturally-occurring temperatures 10% or more increase in turbidity	Included in costs above

Table Five-2 Monitoring Plan

Monitoring Element: Water/Aquatic Resources - Bull Run Watershed Management Unit

Question: Are "Best Management Practices" (BMPs) and specific standards and guidelines pertaining to the Bull Run Watershed Management Unit effective in maintaining or enhancing water quality?

Discussion: The Bull Run Watershed Management Unit was established by PL 95-200. The primary objectives of management is the production of pure, clear, raw, potable water. As directed by PL 95-200, specific water quality standards have been developed and are described in the current edition of Water Quality Standards, Bull Run Watershed Management Unit.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are standards and guidelines and BMPs related to the Bull Run Watershed Management Unit effective in achieving compliance with established water quality standards?	Physical, chemical and biological characteristics of water as described in the current edition of Water Quality Standards for the Bull Run Watershed Management Unit	Intensive and extensive water sampling and implementation monitoring as described in Water Quality and Quantity Data Collection Procedures USDA-Forest Service, Columbia Gorge Ranger Distict	Specific to parameter measured	Good	Variable-See Water Quality and Quantity Data Collection Procedures	Annually	District Ranger, Columbia Gorge RD	Various-See Water Quality Standards for the Bull Run Watershed Management Unit	$450,000 to $500,000

Table Five-2 Monitoring Plan

Monitoring Element: Water/Aquatic Resources - Cumulative Watershed Effects

Question: Are the modeling tools (inherent watershed sensitivity, hydrologic recovery, etc.) and other standards and guidelines effective at minimizing the potential for adverse cumulative watershed effects?

Discussion: FORPLAN estimates of outputs include a timber harvest scheduling or dispersion constraint to minimize the potential for adverse cumulative effects. The methodology incorporates various inherent watershed characteristics to estimate sensitivity and establish variable thresholds of concern for watershed disturbance and hydrologic recovery. The methodology may also be used as a project-level planning tool.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are "watershed disturbance area" constraints for scheduling timber harvest being applied according to standards and guidelines?	Presence or absence of a cumulative effects analysis/discussion in project level planning	Randomly select and review 20-50% of timber harvest planning documents	Cumulative Effects Analyses	Good	Annually	Annually	Watershed Staff	Watershed disturbance levels for analysis areas (SEWs, POAs, etc.) exceed threshold values established in standards and guidelines	$5,000
Are "watershed disturbance area" constraints for scheduling timber harvest adequate for minimizing cumulative effects on stream channels, water quality, and beneficial uses of water?	Changes in stream channel and aquatic habitat characteristics	Aerial photo analysis every 4-5 years; Network of photo-points for critical streams. (Utilize data derived from other monitoring fish habitat, BMP effectiveness etc.)	Photo points (others; pool volume, habitat, etc.)	Good	Annually	Data report annually; analysis report every 5 years	Watershed Staff	Any quantifiable statistically significant decrease in channel conditions or water quality[1]	$10,000 [1]

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[1] *Utilize data derived from Fish Habitat and BMP Effectiveness Monitoring*

Table Five-2 Monitoring Plan

Monitoring Element: Water/Aquatic Resources - Cumulative Watershed Effects (continued)

Question: Are the modeling tools (inherent watershed sensitivity, hydrologic recovery, etc.) and other standards and guidelines effective at minimizing the potential for adverse cumulative watershed effects?

Discussion: FORPLAN estimates of outputs include a timber harvest scheduling or dispersion constraint to minimize the potential for adverse cumulative effects. The methodology incorporates various inherent watershed characteristics to estimate sensitivity and establish variable thresholds of concern for watershed disturbance and hydrologic recovery. The methodology may also be used as a project-level planning tool.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are effects within the range predicted in the FEIS?	Differences in acres programmed to be available for harvest at the project level and planning level	Review project planning records and compare with FORPLAN modeling estimates	Acres	Moderate	Annually	Data reports annually; Analysis reports every 3 years	Watershed Staff	5% increase or decrease in the number of acres shown as available	$10,000

Table Five-2 Monitoring Plan

Monitoring Element: Water/Aquatic Resources - Lakes

Question: Are standards and guidelines pertaining to water quality and riparian areas effective in maintaining or enhancing water quality and riparian conditions of lakes?

Discussion: Standards and guidelines provide direction to enable the Forest to meet the goals of maintaining or improving water quality and riparian conditions of lakes and streams. Water quality characteristics of lakes provide sensitive indicators of the overall effectiveness of standards and guidelines in preventing accelerated erosion, sedimentation, and nutrient loading which may result from resource management activities.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are standards and guidelines effective in maintaining the chemical, biological and physical characteristics of lakes surrounded by areas of timber management and/or intensive recreational use?	Acceleration of eutrophication and acidification	Sample 10% of lakes on the Forest annually; establish permanent monitoring points within lakeside riparian management areas; 10-year follow-up	Specific to chemical, biological, or physical parameters measured	Low to Moderate	Annually	Annually Analysis report after 10 years	Watershed Staff	Increase in nutrients, decrease in pH	$30,000

Table Five-2 Monitoring Plan

Monitoring Element: Water/Aquatic Resources - Wetlands

Question: Are standards and guidelines for riparian areas and water quality effective in maintaining beneficial values of small wetlands?

Discussion: Small wetlands are found Forest-wide and comprise portions of the General Riparian and Key Site Riparian management allocations. They provide unique habitats and clean water. The Clean Water Act mandates protection of wetlands or mitigation of wetland loss. Protection and/or mitigation is provided through implementation.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are management practices effective in maintaining clean water wetland vegetation, and dependent aquatic invertebrates small wetlands?	Changes in biotic communities, water characteristics, and wetland condition, function and values	Survey and sampling 10% of small wetlands near areas of management activities (see monitoring worksheet)	Specific to parameters surveyed and measured	Moderate	Baseline survey prior to adjacent management activity. Data collection annually, thereafter	Data Report Annually Analysis Report every 5 years	Watershed Staff	Decreasing trends in the condition and function of wetlands adjacent to management areas	$20,000

Table Five-2 Monitoring Plan

Monitoring Element: Geology

Question: Are the standards in the Forest Plan adequate to protect unstable areas from reactivation or acceleration of landslides on the Mt. Hood National Forest?

Discussion: Lands must be managed to prevent activation, reactivation or acceleration of movement and subsequent loss of resources.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are standards and guidelines for activity on earthflows being implemented?	Area and size of harvest unit	Field inventory and review of earth-flow. Review of 25% of projects.	% of management area & average acre	Moderate to High	Continuous	Annually	Forest Engineer	More than 5% not meeting standard	$5,000
Are standards and guidelines for activities on active landslides, debris slide/debris flow being implemented?	Area and size of harvest unit	Field inventory and review of landslides. Review of projects	Number of landslides affected on 25% of unit areas	Moderate to High	Continuous	Annually	Forest Engineer	Any active landslide over 30% entered	$5,000
Are low, moderate and high risk areas accurately mapped?	Acres affected	Field inventory	Total acres	Moderate to High	Continuous	Annually	Forest Engineer	5% of inaccuracy in mapping	$10,000

Table Five-2 Monitoring Plan

Monitoring Element: Minerals

Question: Do the standards and guidelines in the Forest Plan support leasable, locatable and salable mineral resources on the Mt. Hood National Forest?

Discussion: It is critical that multiple use management consider mineral activities. Regional direction is to encourage and support mineral activity on National Forests in the Region.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are standards and guidelines for mineral operations and reclamation being implemented correctly?	Plans of Operations, Leases	Field review of 30% projects	Operations Leases Projects	High	Continuous	Annually	Mineral Staff	Any noncompliance with operating plans and lease agreements. Management direction for locatable leasable and/or minerals are not being met	$5,000
Are common variety minerals being removed according to development plans?	Quarry Plans	Field inspection of 25% quarry entries on Forest. Review of transportation plans for 25% of projects	Operations	High	Continuous	Annually	Mineral Staff	Any noncompliance of quarry operating plans; any noncompliance of the Salable Mineral Standard	$2,500
Are standards and guidelines for assessing activities concerning mineral resources being implemented?	Plans of Operations, Leases, Withdrawals	Review of 10% EA's project plans, and withdrawals	Operations projects	High	Continuous	Annually	Mineral Staff	Any noncompliance with stated standards	$2,500

Table Five-2 Monitoring Plan

Monitoring Element: Soil Productivity

Question: Are standards and guidelines developed to protect soil productivity being implemented properly?

Discussion: Standards and guidelines are developed to ensure the productive capability of the soil resource is maintained through time. The proper implementation of standards and guidelines is implemented to their effectiveness.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are standards and guidelines being implemented as designed to achieve adequate protection of the soil productive capacity?	Disturbed soil conditions within activity area	Randomized transects as described in FSM 2520 R-6 Supplement and systematic point transects. Sampling will include both scientific techniques and orva estimates	Percent area disturbed	Moderate	Annually	Annually	Watershed Staff	More than 15 percent of soil in activity area disturbed	$3,800
	Effective soil surface cover	Same as above	Percent effective surface cover	Moderate	Annually	Annually	Watershed Staff	75 & 85 percent effective ground cover on severe & very severe erosion hazard rated soils, respectively	$2,200

Table Five-2 Monitoring Plan

Monitoring Element: Soil Productivity (continued)

Question: Are standards and guidelines developed to protect soil productivity being implemented properly?

Discussion: Standards and guidelines are developed to ensure the productive capability of the soil resource is maintained through time. The proper implementation of standards and guidelines is implemented to their effectiveness.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
	Litter layer consumption by fire	Same as above	Percent of litter layer removed by fire		Annually	Annually	Watershed Staff	Less than 50 percent of litter layer remains following fire treatment	$3,350
	Total above soil organic matter content	Same as above	Tons per acre		Annually	Annually	Watershed Staff	Less than 15 & 25 tons per acre of organic matter on east side and west side plant communities respectively or less than 80% of preharvest levels	$3,350

Table Five-2 Monitoring Plan

Monitoring Element: Long Term Soil Productivity

Question: Does the present standard and guideline of 15 percent soil disturbance ensure that the productive capacity of the soil resource is being maintained?

Discussion: The effectiveness of the 15 percent level of soil disturbance is not based on scientific findings and has been arbitrarily established. The question at the effectiveness of this standard is maintaining soil productivity needs to be resolved.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Is the 15 percent soil disturbance standard & guideline effective in preserving the productive capacity of the soil resource?	Tree volume growth	15 Pair plots on similar soils with disturbed & undisturbed conditions Tree growth by volume will be monitored in harvested areas	Volume/acre at the forest stand level	High	Ten year intervals	Ten years	Watershed Staff PNW Experiment Station	Standard protects productivity at 10% level of significance	$10,000

Table Five-2 Monitoring Plan

Monitoring Element: Cultural Resources

Question: Are cultural resources (CR) being managed, protected, and interpreted according to the Plan's Standards and Guidelines? Are American Indian rights being protected on National Forest lands, and are appropriate coordination activities occurring?

Discussion: A variety of Federal laws and regulations require the protection by management of significant cultural resource values (prehistoric and historic site) and full consideration of modern ethnic concerns in their management, particularly those of American Indian Tribes. Monitoring provides information to determine whether the Forest is complying with this legislation at 3 levels: (1) project, (2) resource, (3) public interest/involvement.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are American Indian rights being protected on National Forest lands and are projects with activities or areas of concern to Indians being coordinated with appropriate Tribal representatives	Rights of Tribes protected; projects in areas of concern coordinated	Sample NEPA and planning documents to determine the extent of contact with Indian Tribes & documentation of concerns	Variety of Contacts	Moderate	Annually	Annually	Recreation Staff	All rights are protected	$1,000
Are significant (National Register eligible) historic bldgs. & structures being maintained, stabilized, and repaired according to historic preservation standards?	Condition of Historic buildings & structures	Field inspections of scheduled buildings and structures	Nat'l Register of Historic places guidelines	High	2 years	2 years	District Ranger	Significant resource change identified	$6,000

Table Five-2 Monitoring Plan

Monitoring Element: Cultural Resources (continued)

Question: Are cultural resources (CR) being managed, protected, and interpreted according to the Plan's Standards and Guidelines? Are American Indian rights being protected on National Forest lands, and are appropriate coordination activities occurring?

Discussion: A variety of Federal laws and regulations require the protection by management of significant cultural resource values (prehistoric and historic site) and full consideration of modern ethnic concerns in their management, particularly those of American Indian Tribes. Monitoring provides information to determine whether the Forest is complying with this legislation at 3 levels: (1) project, (2) resource, and (3) public interest/involvement.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are significant (Nat'l. Register eligible) sites being nominated to the Nat'l. Register of Historic Places?	Nomination of significant cultural resource sites	Review nominations	Number of sites nominated	High	3 years	3 years	Recreation Staff	No nominations within a 3 yr. period	$1,000
Are cultural resource sites being interpreted for the public?	Interpretation of Cultural Resource sites	Review interpretive plans	Number of interpretive	High	3 years	3 years	Recreation Staff	No interpretation Plans within a 3 yr. period	$1,000
Are cultural resource sites being "condition" checked and maintained on a regular basis?	Condition of cultural resource sites	Field inspections of scheduled sites	Change in site conditions	High	Annually	Annually	District Rangers	5% or more of cultural sites exhibit significant condition change from previous year	$14,000
Are cumulative effects of Forest project activities in cultural resources being tracked and studied?	Condition of cultural resource sites offer project activity	Sample comparison of site conditions in relation to the management prescription and protection measures	Site conditions	High	2 years	2 years	District Rangers	10% of sites in degraded condition in relation to protection intent stated in NEPA document and management plan	$12,000

Table Five-2 Monitoring Plan

Monitoring Element: Economic and Social

Question: Are economic and social assumptions, values, and projections valid?

Discussion: Economic values were based on historical data. The value of many of the Forest's outputs are determined by trends in public preferences. Changes in timber availability, markets and technology could have significant effects on several economic variables. There is also an opportunity to begin collecting baseline data for future planning efforts.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Have there been changes in the local population?	Changes in local population	Review reports from U.S. Census, State publications, County, & local agency reports	Thousands of persons	High	Annually	Annually	Planning Staff	+/- 15% change in 3 years	$500
Have there been changes in local employment patterns?	Changes in local employment pattern	Review reports from U.S. Census, State publications, County & local agency reports	Thousands of persons by industry of occupation	High	Annually	Annually	Planning Staff	+/- 15% change in 3 years	$500
Do the 3-year average annual payments to each county meet projections?	Payments to counties	Review Forest records	Dollars	High	Annually	Annually	Planning Staff	Deviations from projections exceed 10% over 3-yr. average	$100
Do the average annual receipts and product prices conform to predictions	Annual receipts	Review revenue reports	Dollars	High	Annual	Annually	Planning Staff	Deviations from expected values exceed 10% over 3 years	$500

Table Five-2 Monitoring Plan

Monitoring Element: Economic and Social (continued)

Question: Are economic and social assumptions, values, and projections valid?

Discussion: Economic values were based on historical data. The value of many of the Forest's outputs are determined by trends in public preferences. Changes in timber availability, markets and technology could have significant effects on several economic variables. There is also an opportunity to begin collecting baseline data for future planning efforts.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Do the average measures of local employment and income rates meet projections?	Local employment and income rates	Review State Employment and income rates	Percent unemployment and income rates	High	5 years	Annually	Planning Staff	Deviations from projections exceed 20% over 5 years	$500
Do totals costs by resource activity and major program costs conform with predictions?	Total costs	Review budget reports	Dollars	High	Annual	Annually	Planning Staff	Deviations from expected values exceed 10% over 3 years	$500
Has there been a significant change in public attitudes, beliefs or values?	Various	Review of public response to Forest mgmt., including interaction with key publics & opinion leaders in communities, media reports, editorials, etc.	Various	Moderate	Continuous	Annually	Public Information Officer All Management Team members to supply information to Public Information Officer	Trend toward Forest - community conflict or new social problems identified	$40,000

Table Five-2 Monitoring Plan

Monitoring Element: Economic and Social (continued)

Question: Are economic and social assumptions, values, and projections valid?

Discussion: Economic values were based on historical data. The value of many of the Forest's outputs are determined by trends in public preferences. Changes in timber availability, markets and technology could have significant effects on several economic variables. There is also an opportunity to begin collecting baseline data for future planning efforts.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Has the Forest's contribution to area forest products industries changed?	Log flows	PNW Publications Timber Disposition Forms	MMCF/year, % distribution by industry	High	Annual	Annually	Timber Staff	Deviation from current situation exceeds 50%	$100

• *All reports issued annually and an update of Socio Economic overview will be prepared every 3 years.*

Table Five-2 Monitoring Plan

Monitoring Element: Range - Allotment Status									
Question: Are we meeting Forest Plan objectives for range?									
Discussion: Forest Plan S&G for utilization are to be incorporated in Allotment Plans according to implementation schedule.									
Evaluation Question	**Measured Action/ Effect**	**Methods**	**Unit of Measure**	**Estimated Reliability**	**Information Collection Frequency**	**Report Period**	**Management Responsibility**	**Threshold of Variability**	**Estimated Annual Cost**
Are AMP's being implemented on the ground?	Amount of forage utilization; condition & trend	Follow methods in FSH 2209.21	AMP	Moderate	Annual	Annual	District Ranger	85% of allotments with implemented AMP at end of decade	$20,000

Table Five-2 Monitoring Plan

Monitoring Element: Noxious Weeds

Question: Are we controlling spread of Noxious Weeds on Mt. Hood NF?

Discussion: Plants that have been identified as pests by the Oregon State Dept. of Ag. shall be controlled as described in the Mt. Hood NF Noxious Weed Mgt. Plan

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are known populations continuing to spread?	Acres Infested	Field Survey	Acres	Moderate	Annual	Annual	District Ranger	Continued Spread of Population	$4,500
Are new infestations occurring?	Acres Infested	Field Survey	Acres	Moderate	Annual	Annual	District Ranger	Presence of noxious weed	$4,600
Are biological control agents controling spread of noxious weeds?	Acres Infested	Field Survey	Acres	Moderate	Annual	Annual	District Ranger	Continued spread of known population	$10,000
Do herbicide treatments for noxious weeds follow Standards set in Veg EIS?	Acres treated	As described in Veg EIS	Acres	High	Annual	Annual	District Ranger	Non-conformance	$4,000

Table Five-2 Monitoring Plan

<table>
<tr><td colspan="10">Monitoring Element: Timber - Catastrophic Changes</td></tr>
<tr><td colspan="10">Question: Have there been any unexpected changes in the inventory of standing timber?</td></tr>
<tr><td colspan="10">Discussion: Catastrophic changes in the amount of standing timber inventory may result from fire, severe windstorms, or other factors. This may affect calculations of the Allowable Sale Quantity.</td></tr>
<tr><th>Evaluation Question</th><th>Measured Action/ Effect</th><th>Methods</th><th>Unit of Measure</th><th>Estimated Reliability</th><th>Information Collection Frequency</th><th>Report Period</th><th>Management Responsibility</th><th>Threshold of Variability</th><th>Estimated Annual Cost</th></tr>
<tr><td>How much growing stock is lost?</td><td>Area, volume</td><td>Maintain record of cumulative changes of area with total volume loss</td><td>Acres, board feet, cubic feet</td><td>Moderate</td><td>Annual, continuous</td><td>Annual</td><td>Timber Staff Officer</td><td>When a total loss of harvestable inventory occurs on more than 2% of suitable land</td><td>$5,000</td></tr>
</table>

Table Five-2 Monitoring Plan

Monitoring Element: Timber - Diversity

Question: How well are we meeting Forest objectives for diversity of the vegetation mosaic?

Discussion: The Regional Guide provides policy guidelines for the size and distribution of cutting units, and provides the procedures for variance. Forest-wide standards and guidelines also speak to the size and distribution of cutting units. Standards may change within the plan period as a result of New Perspective Forestry trends.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
What is the size and distribution of openings created by timber harvest?	Size, distance separating harvest areas	Review of presale plans and sale area maps, TRI, post sale reviews	Number of units that exceed Standards	High to moderately high	Review of all presale plans at the EA/EIS stage, review of one completed sale per district annually	Annual	District Ranger	80% of units must meet size and distribution objectives	$20,000

Table Five-2 Monitoring Plan

Monitoring Element: Timber - Earned Harvest Factor

Question: Are activities contributing Earned Harvest to the Allowable Sale Quantity being accomplished on schedule?

Discussion: Intensive management practices programmed for the future contribute immediately to the ASQ if they increase the LSTSY capacity of commercial forest land. These activities must occur as planned for the Earned Harvest amount to be valid.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are growth-enhancing activities accomplished on schedule?	Amount of precommercial thinning accomplished	TRACS; TRI	Acres	High	Annual	Annual	Timber Staff Officer	When annual accomplishment varies more than 20% from needs. After 5 years, when accumulated accomplishment varies more than 10% from planned amount.	$3,000
	Amount of forest land fertilized	TRACS; TRI	Acres	High	Annual	Annual	Timber Staff Officer	Same as above	$2,000
	Amount of land planted with genetically improved seedlings	TRACS, silviculture accomplishment report	Acres	High	Annual	Annual	Timber Staff Officer	Same as above	$5,000
Is damage caused by insect and disease within acceptable limits?	A real extent of insect and disease agents and their effects on tree growth	Review of current insect and disease survey maps to determine trends. Special surveys to determine effects on growth	Acres	Moderate	Annual	Annual	Timber Staff Officer, RO-FPM	When insect populations or infection centers are on the increase. When 10% of a mgmt. area working group is affected	$25,000

Table Five-2 Monitoring Plan

Monitoring Element: Timber - Harvest

Question: Are we selling and harvesting the amount of timber harvest projected by the Forest Plan? Is the expectation determined by the Forest Plan feasible? Could we harvest more without exceeding the Standards and Guidelines?

Discussion: The Forest Plan relies on complex analysis to determine the amount of timber we should harvest. Changes in land allocation during the plan period may occur. Project level planning may reveal more accurate knowledge of the land's productive capability. Monitoring of other resources may reveal need for adjustments during the plan period. Some cumulative effects are controlled by the amount actually harvested, but our control is through amount sold.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
How much timber is being harvested?	Actual area and volume harvested	STARS, TRACS	Acres, cubic feet (MCF), board feet (MBF)	High	Annual	Annual	Timber Staff Officer	When actual amount harvested varies more than 10% from the planned amount	$15,000
How much timber is being sold?	Amount of timber sold on the Forest	STARS, Appraisals	MBF or Acres	High	Quarterly	Annual	Timber Staff Officer	When annual sold volume or acres deviate more than 10% from FORPLAN outputs. After 3 yrs., when trends indicate a variance from the planned outputs by the end of the planned period	$10,000

Table Five-2 Monitoring Plan

Monitoring Element: Timber - Harvest (continued)

Question: Are we selling and harvesting the amount of timber harvest projected by the Forest Plan? Is the expectation determined by the Forest Plan feasible? Could we harvest more without exceeding the Standards and Guidelines?

Discussion: The Forest Plan relies on complex analysis to determine the amount of timber we should harvest. Changes in land allocation during the plan period may occur. Project level planning may reveal more accurate knowledge of the land's productive capability. Monitoring of other resources may reveal need for adjustments during the plan period. Some cumulative effects are controlled by the amount actually harvested, but our control is through amount sold.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are there any changes in the land base available for producing timber?	Land area suitable for producing timber?	TRI, GIS	Acres by suitability class	Moderate	Continuous with project level planning	Annual	Timber Staff Officer	When cumulative changes would result in a 5% variance in the ASQ level; when cumulative changes total 10% of the area in any suitability screen	$10,000

Table Five-2 Monitoring Plan

Monitoring Element: Timber - Harvest Methods

Question: Are alternative harvest methods adequately considered? Are resource objectives relating to harvest method being met?

Discussion: Forest-wide Standards and Guidelines for timber specify the range of harvest methods that should be considered (Table Four-5) in each management area.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
What harvest methods are being used? What range of methods are considered?	Harvest method; resource standards and guidelines relating to harvest method (for example, Visual Quality Objectives)	STARS, Review of EA/EIS	Number of units	Moderate	Annual	Annual	Timber Staff Officer	When any sale proposal fails to consider the required range of alternative methods. Whenever resource standards and guidelines are not met	$20.000

Table Five-2 Monitoring Plan

Monitoring Element: Timber - Management

Question: How well are the standards and guidelines for timber management being met?

Discussion:

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are we meeting the 5-year regeneration period required by NFMA?	Time interval between harvest (severance) and an established plantation that has survived one growing season after planting, and meets stocking standards	Annual reforestation survival report, TRACS, certified acres	Acres	High	Annual	Annual	Timber Staff Officer	More than 10% of harvested areas take longer than 5 years to achieve minimum stocking	$85,000

Table Five-2 Monitoring Plan

Monitoring Element: Timber - Modeling Assumptions

Question: Are the modeling assumptions appropriate? Do the modelled harvest rates for all Management Areas translate well to Analysis Areas for project level planning?

Discussion: Each Management Area is assigned a limit to the area that could be harvested every decade. The effect of the limit is to extend the length of the rotation period, or the period of time between regeneration harvest entries on a particular area. This limit, called a modeling proxy or assumption, strives to estimate the effect of standards and guidelines on how much timber we can harvest, but it is not a target or goal. The purpose of monitoring is to see whether the proxies are appropriate, and provide a foundation against which achievement of the standards and guidelines can be tested. Project level planning occurs within specific geographic parcels called Analysis Areas, such as drainages or subdrainages. Cumulative effects are assessed within Analysis Areas. A particular Analysis Area may have more land allocated to one Management Area than another. Project level planning attempts to meet Standards and Guidelines for Management Areas within Analysis Areas, while securing the fair share harvest from each Analysis Area.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
What is the Forest-wide actual rate of harvest in each Management Area?	Area and volume harvested	Accumulate total acres and volume cut at time of appraisal	Acres, thousands of board feet (MBF), thousands of cubic feet (MCF)	High	Continuous	Annual	Timber Staff Officer	When the three year average of acreage cut deviates more than 20% from the modeling assumption for a Mgmt. Area; After 5 yrs., when the overall trend, if continued, would result in a 10% deviation from the estimated contribution of any Mgmt. Area	$3,000

Table Five-2 Monitoring Plan

Monitoring Element: Timber - Modeling Assumptions (continued)

Question: Are the modeling proxies appropriate? Do the modelled harvest rates for all Management Areas translate well to Analysis Areas for project level planning?

Discussion: Each Management Area is assigned a limit to the area that could be harvested every decade. The effect of the limit is to extend the length of the rotation period, or the period of time between regeneration harvest entries on a particular area. This limit, called a modeling proxy, strives to estimate the effect of standards and guidelines on how much timber we can harvest, but it is not a target or goal. The purpose of monitoring is to see whether the proxies are appropriate, and provide a foundation against which achievement of the standards and guidelines can be tested. Project level planning occurs within specific geographic parcels called Analysis Areas, such as drainages or sub-drainages. Cumulative effects are assessed within Analysis Areas. A particular Analysis Area may have more land allocated to one Management Area than another. Project level planning attempts to meet Standards and Guidelines for Management Areas within Analysis Areas, while securing the fair share harvest from each Analysis Area.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
What is the actual rate of harvest in each Analysis Area?	Area and volume harvested	At project planning stage, compare proposed acres and volume cut to the Analysis Area's fair share based on modelled estimate	Acres MBF	Moderate	Each Project Plan	Each Project Plan	District Ranger	When Analysis Areas must be re-entered ahead of planned schedule to meet ASQ	Integral with Project Planning

Table Five-2 Monitoring Plan

Monitoring Element: Timber - Old Growth

Question: How much old growth is on the Forest?

Discussion: The Mt. Hood National Forest has about 345.3 thousand acres of old growth. Some will be harvested over the next decade. In addition, some stands that are now mature will acquire old growth attributes during the plan period.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
How much old growth is being cut?	Area harvested	Accumulate acres cut, GIS	Acres	Moderate	Continuous	Annual	Timber Staff Officer	When the actual amount harvested varies more than 20% from the planned amount annually	$5,000

Table Five-2 Monitoring Plan

Monitoring Element: Timber - Silviculture

Question: Do we do what we say we will do?

Discussion: The time interval between planning and execution of plans can run into years and even decades. The planners and those carrying out the plan may not be the same people. Planners may have moved on when their plans are carried out.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are silvicultural prescriptions properly executed?	Prescription	Activity reviews	Stand level silvicultural prescriptions	Moderate	Annual	Annual	Timber Staff Officer	100% of the sample must meet the EA/EIS standards including silvicultural prescriptions. Variance from plans must be approved and documented	$5,000

Table Five-2 Monitoring Plan

Monitoring Element: Air Quality

Question: Are management activities that affect air quality in compliance with the Plan standards/guidelines and State air quality regulations?

Discussion: Activities on the Forest lands must meet State Implementation Plan (SIP) requirements for particulate emissions and visibility as well as Plan standards and guidelines. All prescribed burning must comply with the daily instructions issued by the State Forester. A large part of the Willamette Valley and the City of Bend have been declared "Designated Areas" in the State Smoke Management Plan. The objective of the Smoke Management Plan is to prevent smoke resulting from forest prescribed burning from being carried to or accumulate in Designated Area year-round and locally and seasonally identified smoke sensitive areas.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Were there deviations from State Smoke Management Plan requirements?	Compliance with Forest Service and State air quality guidelines including compliance with State Smoke Management Plan	Measured fuel loading data, fuel consumption modeling, suspended particulate emission modeling and aerial and ground monitoring	Tons per acre, consumed tons per acre, tons per year and number of intrusions respectively	Moderate	Daily when prescribed burning and summarized annually	Annually	Fire Staff	When measured values deviate from those established by the State of Oregon SIP, the Forest Service Pacific Northwest Regional Guide (FEIS) May 1984 Table 4-8, page 4-24, and the Forest Plan	$6,000
Were visibility standards as established by the SIP exceeded as a result of management activity?	Standard Visual Range in identified Wilderness Areas	Photo points	Standard Visual Range and number of hours of impairment	High	As defined in the SIP	Annually	Fire Staff	When neasured values deviate from those established by the State of Oregon SIP and the Forest Service Pacific Northwest Regional Guide (FEIS) May 1984 Table 4-8, page 4-24	$20,000

Table Five-2 Monitoring Plan

<table>
<tr><td colspan="10">Monitoring Element: Fire Protection</td></tr>
<tr><td colspan="10">Question: Are fire protection objectives being achieved as outlined in standards and guidelines?</td></tr>
<tr><td colspan="10">Discussion: Desired result is to provide fire protection capability as needed to provide for the attainment of land management objectives.</td></tr>
<tr><th>Evaluation Question</th><th>Measured Action/ Effect</th><th>Methods</th><th>Unit of Measure</th><th>Estimated Reliability</th><th>Information Collection Frequency</th><th>Report Period</th><th>Management Responsibility</th><th>Threshold of Variability</th><th>Estimated Annual Cost</th></tr>
<tr><td>Are the number of human-caused wildfires within levels considered in the Plan?</td><td>Number of human-caused wildfires</td><td>Summary of individual Fire Report data</td><td>Number of wildfires by statistical cause and people class</td><td>High</td><td>Annually</td><td>Every five years</td><td>Fire Staff</td><td>More than 20 percent departure from expected number per decade based on 5 years of data</td><td>$3,000</td></tr>
<tr><td>Are the number of, size of, and intensity of wildfires within levels considered in the Plan?</td><td>Number of, size of, and intensity of wildfires</td><td>Summary of individual Fire Report data</td><td>Number of wildfires by size and intensity</td><td>High</td><td>Annually</td><td>Every five years</td><td>Fire Staff</td><td>More than 20 percent departure from expected values per decade based on 5 years of data.</td><td>$5,000</td></tr>
<tr><td>Is the Fire Management Effectiveness Index (FMEI) within levels expected in the Plan?</td><td>FMEI</td><td>Summary of individual Fire Report data</td><td>FMEI</td><td>Moderate</td><td>Annually</td><td>Every five years</td><td>Fire Staff</td><td>More than 40 percent departure from expected values per decade based on 5 years of data</td><td>$1,000</td></tr>
<tr><td>Are Desired Residue (Fuel) Profiles being met?</td><td>Percent deviation from Profile fuel loading levels identified in Environmental Assessments</td><td>Review Environmental Assessments and post treatment fuel loadings</td><td>Tons per acres by size class</td><td>Moderate</td><td>Annually on 5 percent of Environmental Assessments</td><td>Annually</td><td>Fire Staff</td><td>When there is more than 30 percent departure on more than 20 percent of the acres sampled</td><td>$10,000</td></tr>
</table>

Table Five-2 Monitoring Plan

Monitoring Element: Visual Resources

Question: Are the scenic qualities of the forest landscapes being managed as directed in the Forest Plan?

Discussion: To provide visually attractive forest landscapes over the long term, visual quality objectives (VQOs) are established in the Forest Plan for all National Forest lands. Monitoring management activities for achievement of VQOs, individually and cumulatively, will measure how well the visual resource is being managed.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Do management activities meet the Visual Quality Objectives assigned in the Forest Plan?	Visual effects of projects which alter landscape	Field review of completed projects	VQO criteria	High	Biannual sample of 3 to 5 projects on each District	Every 2 years	Recreation Staff	Score of less than 7 on a 1-10 scale of project rating criteria [1]	$8,500
Are cumulative visual effects of resource management consistent with the predicted overall viewshed conditions within Allocations B2 & B9?	Extent of visual effects in a total viewshed	Aerial photo and field inventory of overall viewshed conditions	Percent of viewshed in existing visual condition categories [1]	Moderate	Every 5 years	5 and 10 years	Recreation Staff	Any viewshed not consistent with predicted visual condition	$8,000

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[1] *See Monitoring Plan worksheets for further description.*

Table Five-2 Monitoring Plan

Monitoring Element: Wildlife - Bald Eagle

Question: Are bald eagle recovery objectives being met on the Forest?

Discussion: The bald eagle is listed as Threatened by the USFWS. Recovery objectives and management considerations are required under the Pacific States Bald Eagle Recovery Plan. Further guidelines have been developed in the Working Implementation Plan for Bald Eagle Recovery in Washington and Oregon. The Forest has potential bald eagle nesting territories and known winter roosting in the Columbia River, High Cascades and Willamette recovery zone. These sites require protection and special management consideration.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are all known and identified potential bald eagle nest and roost sites protected in accordance with the Forest Plan and USFWS Recovery Plan?	Acres managed or protected for bald eagles	Field survey/habitat inventory; Review plans	Protected sites; Management plans	High	Annual	Annual	District Ranger	Any known site not protected	$6,000/site/year until 7 sites surveyed and planned
Have FSM 2670 and Forest-wide Standards and Guidelines pertinent to Bald Eagles been applied to activities which might effect habitat of or habitat use by bald eagles?	F.S. Manual, Standards & Guidelines compliance	Project review	Projects reviewed	High	By project	Annual	Wildlife Staff	Any planned activity not in compliance	$3,000

Table Five-2 Monitoring Plan

Monitoring Element: Wildlife - Bald Eagle (continued)

Question: Are bald eagle recovery objectives being met on the Forest?

Discussion: The bald eagle is listed as Threatened by the USFWS. Recovery objectives and management considerations are required under the Pacific States Bald Eagle Recovery Plan. Further guidelines have been developed in the Working Implementation Plan for Bald Eagle Recovery in Washington and Oregon. The Forest has potential bald eagle nesting territories and known winter roosting in the Columbia River, High Cascades and Willamette recovery zone. These sites require protection and special management consideration.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are Bald Eagle numbers and habitat being maintained or increased on the Forest?	Population numbers in suitable habitat as defined by USF&WS Recovery Plan	Population and habitat inventories	Eagles, acres	Moderate	Annual	Annual	District Ranger	5% loss in acres of habitat within 5 yr. period. 10% change in eagle numbers over 5 yr. period.	$2,000

Table Five-2 Monitoring Plan

Monitoring Element: Wildlife - Peregrine Falcon

Question: Are the objectives for peregrine falcon recovery being met on the Forest?

Discussion: Peregrine falcons are an endangered species in the Pacific Northwest. Recovery objectives require the establishment and maintenance of 3 pairs of peregrine falcons in the Columbia Gorge breeding management unit. Seven potential nest sites have been identified on the Forest. Three pairs of peregrines initiated nesting activities on the Forest in 1990. A hacking program, in cooperation with ODFW and the Peregrine Fund, was initiated in 1986. As of 1990, twenty-four young falcons will have been released from sites on the Columbia Gorge and Zig Zag Ranger Districts.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are all known pairs of Peregrine Falcons on the Forest protected?	Pairs of falcons	Field survey/habitat inventory ODFW & USFWS data	# pairs protected	High	Annual	Annual	Wildlife Staff	Any known site not protected	$1,000
Has all identified potential habitat been validated?	Habitat availability	Field survey	Sites	Moderate to High	Annual	Annual	District Ranger	Any identified potential site not validated within 5 years of Forest Plan implementation	$1,500
Have identified areas been surveyed for occupancy?	Falcon activity	Field survey	Sites	Moderate to High	Annual	Annual	District Ranger	Any identified site not surveyed within 5 years of Forest Plan implementation	$1,000
Have Peregrine falcons begun to use identified sites? Are populations increasing?	Site use, # of falcons	Field surveys, ODFW & USFWS data	# falcons	Moderate to High	Every 3rd year	Every 3rd year	Wildlife Staff	<80% of sites occupied after 10 years	$1,000

Table Five-2 Monitoring Plan

Monitoring Element: Wildlife - Primary Cavity Excavators

Question: Is adequate habitat being maintained to sustain viable populations of primary excavators on the Mt. Hood National Forest?

Discussion: Primary cavity excavators are those species of birds that actively excavate nest and roost cavities in dead and defective trees. On the Mt. Hood National Forest, primary excavators include downy and hairy woodpeckers, red-breasted sapsuckers, norther tree-toed woodpeckers, norther flickers, pileated woodpeckers and nuthatches. Primary cavity excavators are indicator species for dead and defective tree habitat across all forest types. This guild of species in turn creates habitat for a wide variety of secondary cavity nesting animals and may be critical to their survival. Trees used by provided for primary cavity nesters are described as "wildlife trees" or snags.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are numbers, sizes, species and distribution of wildlife trees prescribed in EA's and other planning documents being retained on harvest units to meet at least 60% of biological potential over time, as required by standards and guidelines?	Habitat capability	Field inventory	Acres meeting standards and guidelines	Moderate	By project	Annual	District Ranger	5% of treatment units do not meet standards & guidelines	$30,000
Are existing snags and replacement trees marked for retention surviving harvest activities and remaining suitable for predicted length of time?	Snag survival	Field inventory, periodic survey	% survival over time	Moderate	Before/after treatments, every 3rd year, 25% sample	Annual	District Ranger	10% of treatment areas do not meet prescription at any one of the survey intervals	$4,000

Table Five-2 Monitoring Plan

Monitoring Element: Wildlife - Primary Cavity Excavators (continued)

Question: Is adequate habitat being maintained to sustain viable populations of primary excavators on the Mt. Hood National Forest?

Discussion: Primary cavity excavators are those species of birds that actively excavate nest and roost cavities in dead and defective trees. On the Mt. Hood National Forest, primary excavators include downy and hairy woodpeckers, red-breasted sapsuckers, northern tree toed woodpeckers, northern flickers, pileated woodpeckers and nuthatches. Primary cavity excavators are indicator species for dead and defective tree habitat across all forest types. This guild of species in turn creates habitat for a wide variety of secondary cavity nesting animals and may be critical to their survival. Tree used by provided for primary cavity nesters are described as "wildlife trees" or snags.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are wildlife trees being used by primary and secondary cavity nesters?	Leave tree use. % biological potential met	Field surveys snags/target species	Snags w/ cavities, population levels	Moderate	Every 3rd year after treatments complete	Annual	District Ranger	Less than 75% of snags show recent use within 5 years of unit treatment	$15,000

Table Five-2 Monitoring Plan

Monitoring Element: Wildlife - Winter Range

Question: Is adequate winter range for deer and elk being provided on the Forest?

Discussion: Deer and elk winter range (generally found on southwest facing slopes below 2800 ft. elevation) is a limited resource on the Mt. Hood National Forest. Nutrious forage and protection from adverse weather conditions are critical components of suitable winter range. Adequate winter range is vital to the over-winter survival of deer and elk. Winter range conditions play an important role in the spring condition of does and cows and the survival of off-spring.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Do winter range areas currently provide proportions of optimal/thermal cover and forage in suitable distribution as designated in S&G? If not, have silvicultural prescriptions been prepared for achieving standards?	Habitat effectiveness	Field survey, habitat modeling	Habitat quality rating	Moderate	Every other year after baseline - baseline w/3 yrs of implementation	Every other year	Wildlife Staff	Cover/forage standards and guidelines not met on 20% of any portion of planning area identified as winter range	$7,500
Do proposed management activities and facility developments comply with standards and guidelines?	Standards & guidelines compliance	Review project proposals	# plans reviewed	Moderate to High	By project	Annual	District Ranger	Any plan not in compliance	$1,000
Is condition of winter range being maintained?	Habitat condition	Field survey	Acres	Moderate	Annual	Annual	Wildlife Staff	Wintering big game populations varies by 25% within any 5 year period	$7,000

Table Five-2 Monitoring Plan

Monitoring Element: Wildlife - Pine Marten and Pileated Woodpecker

Question: Is there an adequate amount, quality and distribution of mature/old growth forest to maintain viable populations of species dependent on this successional stage of forest habitat?

Discussion: Martens and pileated woodpeckers are ecological indicator species for mature and old growth coniferous forests on the Mt. Hood National Forest. As ecological indicators, marten and pileated woodpeckers represent numerous wildlife species that are dependent on the vegetation and structural characteristics of older forests including large trees, snags, down logs, closed and multi-layered canopies.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are sufficient numbers of habitat management areas provided to meet the distributional pattern of one area every 5 miles for pileated woodpeckers and one every 2 miles for pine marten?	Habitat distribution	Mapping analysis	Distance	High	Once within 2 years of implementation	Once within 2 years of implementation	Wildlife Staff	10% of areas do not meet distribution requirements	$5,000
Does the habitat within identified habitat areas meet Forest definition as suitable mature/old growth forest?	Habitat quality	Field survey	Acres of suitable habitat	Moderate	Once within 2 years of implementation, then every 5 years	Once within 2 years of implementation, then every 5 years	Wildlife Staff	10% of sampled acres unsuitable	Included above
Are habitat areas occupied by pileated woodpeckers and martens?	Occupancy	Field Survey (winter track counts for marten)	# areas occupied	Low to Moderate	Annual	Annual	District Rangers	10% of habitat areas not occupied by indicator species	$20,000

Table Five-2 Monitoring Plan

Monitoring Element: Wildlife - Pine Marten and Pileated Woodpecker (continued)

Question: Is there an adequate amount, quality and distribution of mature/old growth forest to maintain viable populations of species dependent on this successional stage of forest habitat?

Discussion: Martens and pileated woodpeckers are ecological indicator species for mature and old growth coniferous forests on the Mt. Hood National Forest. As ecological indicators, marten and pileated woodpeckers represent numerous wildlife species that are dependent on the vegetation and structural characteristics of older forests including large trees, snags, down logs, closed and multi-layered canopies.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are habitat areas providing for viable populations?	Successful reproduction	Field Survey	# reporductive pairs	Low to moderate	Every 3	Every 3	Wildlife Staff	15% decline in population levels over 15 year period	$15,000
Do all management activities planned within woodpecker and marten areas meet standards and guidelines for the allocation?	Standards and guidelines compliance	Activity/plan review	# plans meeting Standards and Guidelines	High	By project	Annual	District Ranger	Any plan not in compliance	$1,000

Table Five-2 Monitoring Plan

Monitoring Element: Wildlife - Pine Oak

Question: Are pine/oak communities being managed to maintain the quality of this unique habitat for management indicator species?

Discussion: Pine/oak plant communities provide a unique habitat type that is rapidly decreasing in availability on a Regional scale. Pine/oak stands, particularly mature and over-mature stands, provide optimal habitat for several east side Management Indicator Species, particularly turkey and gray squirrel, which are not found in other plant communities on the Forest. Special protection and management consideration is needed to maintqin these communities.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Do silvicultural prescriptions meet standards and guidelines for big game cover and forage requirements?	Management Prescriptions	Project plan and implementation review	N/A	Moderate to High	By project	Annual	District Ranger	> 5% of treatment areas do not meet EA prescriptions for big game	$1,500
Are wildlife trees being managed at 90% of maximum biological potential, as specified in standards and guidelines?	Wildlife tree management	Field survey	% areas meeting standards and guidelines	Moderate to High	Annual	Annual	District Ranger	> 10% of treatment areas do not meet standards and guidelines for wildlife trees in this allocation	(included in primary excavators)
Is road density of 2.0 miles/square mile or less being met?	Potential for disturbance	Review transportation system	Miles road/section	High	Annual	Annual	District Ranger	Road densities > 20/mi over >20 % of the management area 5 years after implementation	$1,000

Table Five-2 Monitoring Plan

Monitoring Element: Wildlife - Pine Oak (continued)

Question: Are pine/oak communities being managed to maintain the quality of this unique habitat for management indicator species?

Discussion: Pine/oak plant communities provide a unique habitat type that is rapidly decreasing in availability on a Regional scale. Pine/oak stands, particularly mature and over-mature stands, provide optimal habitat for several east side Management Indicator Species, particularly turkey and gray squirrel, which are not found in other plant communities on the Forest. Special protection and management consideration is needed to maintqin these communities.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Is adequate nesting/roosting habitat for squirrels and turkeys being maintained?	Is adequate habitat available	Field inventory	Acres of habitat	Moderate to High	Annual	Annual	District Ranger	Prescriptions for turkey and squirrel habitat not met on 20% of treated areas	$4,500

Table Five-2 Monitoring Plan

Monitoring Element: Wildlife - Northern Spotted Owl

Question: Is the population and habitat of the Northern Spotted Owl on the Forest being maintained at the level predicted in the FEIS?

Discussion: The FEIS for spotted owls estimated the long term capability of the Forest to be 66 sites. Of these, 37 sites are SOHA's. The Northern Spotted Owl is listed as Threatened by the USFWS and the State of Oregon. Spotted owls are an ecological indicator for mature and old growth forest habitats. Monitoring of habitat conditions and spotted owl populations is critical because of known and potential decline in habitat and species numbers and the species' State and Federal status.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are spotted owl network sites identified and being maintained in correct numbers, size, distribution and habitat quality to meet R6 direction and Forest standards and guidelines?	Habitat composition, SOHA numbers, distribution, size	Field survey/habitat monitoring	SOHA acres of suitable habitat	Moderate to High	Annual	Annual	District Ranger	5% of SOHA acres not in compliance with standards and guidelines	$25,000
Is the Forest maintaining capability to support the number of pairs of spotted owls within reserved lands, general Forest and SOHAs over time and/or habitat?	Pairs of spotted owls	Banding/field survey	Pairs	SOHA: High Other areas: Low to Moderate	Annual 25% of lands outside SOHAs surveyed annually	Annual	Wildlife Staff	a 'no' answer to the monitoring question	$50,000

Table Five-2 Monitoring Plan

Monitoring Element: Wildlife - Northern Spotted Owl (continued)

Question: Is the population and habitat of the Northern Spotted Owl on the Forest being maintained at the level predicted in the FEIS?

Discussion: The FEIS for spotted owls estimated the long term capability of the Forest to be 66 sites. Of these, 37 sites are SOHA's. The Northern Spotted Owl is listed as Threatened by the USFWS and the State of Oregon. Spotted owls are an ecological indicator for mature and old growth forest habitats. Monitoring of habitat conditions and spotted owl populations is critical becuase of known and potential decline in habitat and species numbers and the species' State and Federal status.

Evaluation Question	**Measured Action/ Effect**	**Methods**	**Unit of Measure**	**Estimated Reliability**	**Information Collection Frequency**	**Report Period**	**Management Responsibility**	**Threshold of Variability**	**Estimated Annual Cost**
Are spotted owls outside SOHAs located? Are these pairs reproducing at least once every 3 years?	Number of reproductive pairs	Field survey/banding	Number of pairs, number of fledged young	Low	25% of lands outside SOHA surveyed annually	Annual	Wildlife Staff	5% decline in production over 3 year period for known pairs (based on first year known pairs)	$70,000
Are all activities that might effect SOHAs being monitored for compliance with standards and guidelines?	Compliance with standards and guidelines	Review project proposals	N/A	High	By activity	Annual	District Ranger	A 'no' answer to the monitoring question	$5,000

Table Five-2 Monitoring Plan

Monitoring Element: Wildlife - Summer Range

Question: Does designated summer range provide quality habitat for reproduction, rearing of young and general health of deer and elk populations on the Forest?

Discussion: Quality summer habitat, including well distributed forage, water, thermal and optimal cover, and calving (fawning)/rearing areas, is critical to the maintenance of healthy deer and elk populations. Deer and elk are important as integral components of their ecosystems in predator/prey relationships and vegetational succession. They also provide recreational opportunities for hunters, photography, and simple viewing. Herd objectives established in cooperation with ODFW need to be accomplished.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Do all proposed management activities and developments within the management area comply with standards and guidelines?	Project proposals	Document review	N/A	High	By project	Annual	District Ranger	Any plan not in compliance	$1,500
Are deer/elk populations at/above/below desired population levels?	Herd numbers/composition	Review ODFW inventories	Herd numbers, composition	Low to Moderate	Every other year	Every other year		Deer/elk populations not within 25% of herd goals with 5 years of management plan implementation	$4,000 per year for 5 years

Table Five-2 Monitoring Plan

Monitoring Element: Wildlife - T, E & S Plants

Question: Have populations of all threatened, endangered and sensitive plants been inventoried, and are these populations being maintained at viable levels?

Discussion: A Forest-wide inventory of T, E and S plants is lacking. No known Federally listed T & E plants occur on the Forest; however, numerous sensitive and candidate species do occur and require special consideration and/or protection.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Have sensitive plant inventories been conducted for all ground-disturbing activities?	Projects requiring biological evaluations	Field survey of high probability areas	Number of projects with B.E.'s	High	By project	Annual	Wildlife/ Botany Staff	Any project without complete B.E.	$7,500
Are sensitive plant inventories being conducted to determine status of populations outside of commercial forest areas?	Inventoried acres	Field survey	Acres	Moderate	Annual	Annual	Wildlife/ Botany Staff	25% of the "no treatment" acres not inventoried within 5 years of implementation	$15,000

Table Five-2 Monitoring Plan

Monitoring Element: Wildlife - T, E & S Plants (continued)

Question: Have populations of all threatened, endangered and sensitive plants been inventoried, and are these populations being maintained at viable levels?

Discussion: A Forest-wide inventory of T, E and S plants is lacking. No known Federally listed T & E plants occur on the Forest; however, numerous sensitive and candidate species do occur and require special consideration and/or protection.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Have protective measures inplemented as part of project activities been effective in maintaining the integrity of sensitive plant sites?	Sites/local populations retained and productive	Field survey to Regional standards	Number of sites maintained	Moderate	Every other year, beginning with year 2 after implementation	Every 2 years	District Ranger	5% loss of protected sites within a 5 year period	$15,000
Are all standards and guidelines that apply to T, E & S plants being implemented as required?	Standards and guidelines compliance	Review project plans and implementation	N/A	High	By project	Annual	Wildlife/ Botany Staff	A "no" answer to this monitoring question	$2,500

Table Five-2 Monitoring Plan

Monitoring Element: Visual

Question: Are wildlife management activities and objectives compatable with the visual objectives of the area.

Discussion: Standards are designed to provide quality habitat for elk and other wildlife while also providing Forest visitors a wide variety of natural appearing scenery.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are Deer/Elk populations within 10% of herd goals within 5 years of Forest Plan implementation	Population change	Field survey 20%/year	# of animals	low	annual	annual	District Ranger	Population number 5 year average +/- 10% of areas herd objectives	7,000
Are Cow/Calf or Doe/Fawn ratios below acceptable levels on 20% of summer range 5 years after Forest Plan implementation.	Ratio change	Field survey	animals	low	annual	annual	District Ranger	Herd composition ratio are within ODF&W confidence intervals	4,000
Do all proposed management activities & enhancement projects comply with standards and guidelines and area management plans?	Project implementation	Field Review	Projects	moderate	annually	every 5 years	District Ranger	Any Plan not in compliance	1,500

Table Five-2 Monitoring Plan

Monitoring Element: Riparian Terrestrial Habitat Effectiveness

Question: Are Riparian standards and guidelines effective in meeting Forest Goals for terrestrial riparian resources?

Discussion: The standards and guidelines provide direction to enable the Forest to meet the goals for riparian areas. These goals are to provide 1) 90% of potential populations of primary cavity excavators, 2) optimal thermal cover for deer and elk, 3) input of large woody material to the stream, 4) full floodplain functioning, 5) dispersal of interior species across the landscape, 6) habitat for riparian dependent plant and wildlife species. The Forest's ability to meet the goals depends on the effectiveness of standards and guidelines for riparian areas.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are riparian areas providing for 1) 90% of potential populations of primary cavity excavators, 2) optimal cover for deer and elk, 3) full floodplain functioning, 4) corridors for dispersal of interior species, 5) riparian dependent plant and wildlife species?	1-5: Changes in quality of riparian plant and wildlife habitat 2-4: Amount of interior and corridor habitat 5: Plant and animal community diversity	1-5: Field sample approx. 25% of stream length affected by project work before and after projects 4: Evaluate % of watershed connected by riparian corridors with and without project 5: Inventory riparian dependent species (research)	1: Snags and down logs/acre 2: 80% of area with closed canopy, multiple canopy layers 3: % floodplain in riparian management 4: % watershed connected	Low	Annual	1: Annual 2: Every 5 years 3: Annual 4: Every 5 years	District Ranger	1: Increase of 10% of riparian acres having less than 90% snag levels 2: 10% loss of thermal/optimal cover in riparian areas 3: A decrease of 10% in floodplain functioning 4: An increase of 5% in riparian fragmentation within a 5 year period	$15,000

Table Five-2 Monitoring Plan

Monitoring Element: Developed Recreation

Question: Are developed recreation sites providing the variety of use opportunity designed to meet user's needs, interests, and equipment; and being maintained to a level expected and accepted by those using developed facilities?

Discussion: Developed recreation sites should be designed to meet customer expectations of National Forest campgrounds, and meet their technological needs, and interests. These sites should also be well maintained with facilities at or above standard condition, including the site protection and natural resources. A variety of development levels should be distributed throughout the Forest to meet customer interests, ROS experiences, and continue to provide a range of activites.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are developed sites being used in a manner consistent with the site design purpose?	Type of recreation use matches site design & setting	Visual observation by F.S. personnel & random surveys by site	Amount and type of use in each site design	Moderate	Seasonally	Annually	District Ranger	Site is being used more than 30% of the time in a manner that was not anticipated or planned for	$4,000
Are the range of developed sites provided and distributed throughout the Forest consistent with customer preference and use trends?	Degree of overuse in some areas and underuse in other geographic areas	User surveys, visual observation. Random sample of sites	Site use figures	Moderate	Annually	Annually	District Ranger	20% of the sites are over-used and/or 40% of the sites are under-used	$4,000

Table Five-2 Monitoring Plan

Monitoring Element: Recreation Opportunity Spectrum (ROS) Settings

Question: Are physical/environmental, social, and managerial conditions for dispersed ROS settings being planned for a wide range of activities consistent with public demand?

Discussion: A broad spectrum of dispersed recreation opportunity settings are provided in response to projected public demand. It is essential to determine that these settings are planned, maintained, and managed in a condition to satisfy this demand.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are Forest management activities resulting in change in ROS settings (Recreation Opportunity Spectrum) so that end results do not meet the recreation setting opportunities expected in the Plan?	Deviation from ROS class standards	Review 50% randomly selected environmental documents for a management area to ensure that ROS has been addressed during project design & activities meet ROS standards for the management area. Random field review of project accomplishment. 3 per district per year	ROS class setting indicators (FSM 2311.1)	High	Annually	Every 2 years	Recreation Staff	Change in setting resulting in a more or less developed condition than that identified for a specific management area (FSM 2311.1)	$5,000

Table Five-2 Monitoring Plan

<table>
<tr><td colspan="10">Monitoring Element: Roadless Areas</td></tr>
<tr><td colspan="10">Question: Are roadless areas and other unroaded lands being maintained in the condition provided for in Forest Plan management?</td></tr>
<tr><td colspan="10">Discussion: Roadless areas and unroaded lands are the source areas for potential wilderness and semi-primitive recreation experiences and therefore are of significant interest to many public groups. Some of these areas are also reservoirs of standing old growth timber and varied wildlife habitats.</td></tr>
<tr><th>Evaluation Question</th><th>Measured Action/ Effect</th><th>Methods</th><th>Unit of Measure</th><th>Estimated Reliability</th><th>Information Collection Frequency</th><th>Report Period</th><th>Management Responsibility</th><th>Threshold of Variability</th><th>Estimated Annual Cost</th></tr>
<tr><td>Are the remaining acreages and number of inventoried roadless areas and other unroaded areas consistent with Forest Plan direction and projections?</td><td>Acres remaining in roadless or unroaded condition</td><td>Review of project documentation for timber harvest, road construction, or other land disturbing activities</td><td>Acres and number of areas</td><td>High</td><td>Annually</td><td>Annually</td><td>District Ranger</td><td>When planned actions would reduce the size of the prescribed roadless area or unroaded area</td><td>$3,000</td></tr>
</table>

Table Five-2 Monitoring Plan

Monitoring Element: Special Interest Areas

Question: Are the natural, cultural, and historic attributes and conditions of designated special interest areas being managed to assure their protection and proper human use?

Discussion: Many Special Interest Areas (SIA's) are designated for protection, but also provide for human use and enjoyment of their special qualities. They are, however, vulnerable to the affects of over use, unauthorized activities, and the influences of adjacent management.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management /Responsibility	Threshold of Variability	Estimated Annual Cost
Are actions used to accommodate and manage human use of SIA's (Special Interest Area) employed in a manner to maintain and protect the special attributes of the SIA as specified by management area direction?	Deviation from Recreation Opportunity Spectrum (ROS) class standards	Review of proposed management actions and field review sample of project accomplishment by individual area	ROS setting indicators (FSM 2311.1)	High	Every 2 years	Every 2 years	District Rangers	Failure to meet standards for ROS class indicators (FSM 2311.1)	$4,000

Table Five-2 Monitoring Plan

Monitoring Element: Trails

Question: Are trails and trail corridors being maintained and managed for a variety of uses and experiences consistent with public demand?

Discussion: Protection and maintenance of trail facilities and trail environments is a major concern with the public.

Evaluation Question	Measured Action/Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are project management activities consistent with standards for trail management objectives and/or Recreation Opportunity Spectrum (ROS) standards?	Deviation from trail management maintenance, and/or ROS standards	Review sample of prepared project plans. Field review sample of project accomplishment	Miles of trail management objective maintenance class, and/or ROS indicators (FSM 2311.1)	High	Annually	Annually	District Rangers	When management activities are inconsistent with trail management objectives, and/or maintenance, construction, and/or ROS criteria (FSM 2311.1)	$6,000
Is trail construction and reconstruction being accomplished as scheduled in the Forest Plan?	Miles of trail constructed and reconstructed	Review all trail construction accomplishment reports	Miles	High	Annually	Annually	Recreation Staff	Less than 75% of projected trail mileage constructed or reconstructed	$1,000

Table Five-2 Monitoring Plan

Monitoring Element: Wilderness

Question: Is Wilderness being managed to maintain wilderness character and natural processes and provide for a wide range of permitted uses.

Discussion: Wilderness management features naturalness, opportunities for solitude, challenge, and inspiration. It accommodates a wide range of uses such as recreation, scenic, scientific, educational, conservation, and historical as well as other nonconforming uses permitted by the Wilderness Act, 1964.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are wilderness use levels within the limits established for each Wilderness Resource Spectrum (WRS) class?	Use levels of specific areas by WRS class	Use permit visitor registration, recreation information management (RIM) use reports, & field observation during peak season of use. Sample heavy use areas and primary trail routes.	RVD's and/or PAOT's	High	Annually	Annually, with 5-year report that describes significance of findings	District Rangers	When use levels exceed capacity established for each wilderness or a downward trend, in wilderness quality is determined	$15,000
Are the physical/ biological, managerial, and social settings of each Wilderness Resource Spectrum (WRS) maintained consistent with the standards for wilderness management	Conditions of physical/ biological, social, and managerial setting of each WRS class	Field observation of heavy use areas and travel routes during peak season of use. Sample field observation at other times. Use LAC assessments	Acres not meeting established WRS class standards	High	Annually	Annually with 5-year report that describes significance of findings	District Rangers	When Limits of Acceptable Change (LAC) are exceeded, Forest Plan Standards are not achieved, or a downward trend in condition is observed by WRS class	$20,000

Table Five-2 Monitoring Plan

Monitoring Element: Wild and Scenic Rivers

Question: Are the outstandingly remarkable river values of all eligible, suitable and designated Wild and Scenic Rivers being maintained or enhanced as required?

Discussion: Federal law mandates the protection of outstandingly remarkable values of eligible, suitable, and designated Wild and Scenic Rivers at the river class for which they qualify.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
For eligible and suitable rivers, are the attributes for potential classification for Wild & Scenic River designation being maintained? For designated Wild & Scenic Rivers, are the "outstandingluy remarkable" values and other values being protected consistent with the Wild & Scenic Rivers Act?	Effects of activities on attributes for potential classification of eligible and suitable river segments. Effects of activities on "outstanding" values of designated rivers	Project review on all actions involving vegetation, soil, geology, scenery, & recreation use level manipulation	Acres within river corridor not meeting desired attributes of river classification and/or outstandingly remarkable values	High	Annually	Annually with 3 yr. report that describes significance of findings	Recreation Staff/ District Rangers	When activities would lower actual or potential classification, or adversely affect the "outstandingly remarkable" values of a river segment	$5,000
Have management plans been written for designated wild and scenic rivers?	Completion of management plans	Review of management plans for designated rivers	Management Plans	High	Annually	Annually	Recreation Staff	Management Plans not completed as scheduled	$1,000

Table Five-2 Monitoring Plan

Monitoring Element: Wild and Scenic Rivers (continued)

Question: Are the outstandingly remarkable river values of all eligible, suitable and designated Wild and Scenic Rivers being maintained or enhanced as required?

Discussion: Federal law mandates the protection of outstandingly remarkable values of eligible, suitable, and designated Wild and Scenic Rivers at the river class to which they quaify.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Have suitability studies been completed for eligible wild & scenic rivers?	Completion of suitability studies	Review of suitability studies for eligible rivers	Suitability studies	High	Annually	Annually	Recreation Staff	Suitability studies not completed as scheduled	$1,000

Table Five-2 Monitoring Plan

Monitoring Element: Off-Road Vehicle (ORV) Use

Question: Are ORV opportunities providing a quality experience to the customers, ensuring their safety, and the safety of the general public? Are conflicts being minimized between users, with wildlife (and their habitats), and is resource damage being minimized - in areas that are suitable for each appropriate ORV use?

Discussion: ORV areas should provide opportunities for the ORV enthusiast which are safe for all users and nonusers, meet their recreation needs, and do not harass wildlife or degrade wildlife and fish habitat or other natural resource environs.

Evaluation Question	**Measured Action/ Effect**	**Methods**	**Unit of Measure**	**Estimated Reliability**	**Information Collection Frequency**	**Report Period**	**Management Responsibility**	**Threshold of Variability**	**Estimated Annual Cost**
Are high quality ORV opportunities provided in areas which are suitable for ORV use and the needs, skills, and interest of users?	Use of provided areas	Visitor counts, market survey	ORV RVD's	Moderate	Monthly	Annually	District Ranger	50% of the ORV facilities are used less than 60% of the time	$6,000
Are the ORV opportunities provided effective in minimizing conflicts between user groups and safe for users and the general public?	Conflicts between users	Letters & other correspondence as well as field contacts, interviews & public meetings	Number & types of accidents and complaints	Moderate	Monthly	Annually	District Ranger	Complaints from public indicate an increasing trend in conflict among trail users and accidents	$2,000

Table Five-2 Monitoring Plan

Monitoring Element: Off-Road Vehicle (ORV) Use (continued)

Question: Are ORV opportunities providing a quality experience to the customers, ensuring their safety, and the safety of the general public? Are conflicts being minimized between users, with wildlife (and their habitats), and is resource damage being minimized - in areas that are suitable for each appropriate ORV use?

Discussion: ORV areas should provide opportunities for the ORV enthusiast which are safe for all users and nonusers, meet their recreation needs, and do not harass wildlife or degrade wildlife and fish habitat or other natural resource environs.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are ORV opportunities being located, designed, and managed to minimize the negative effects (within acceptable limits) on key fish and wildlife species and sensitive habitats?	Reproductive success, habitat avoidance and/or habitat quality	Identify key species or sensitive habitats on project by project basis[1]	Specific to species or habitat selected	Moderate	Annually or biannually depending on species or habitat selected	Annually	District Ranger	Specific to individual key species or sensitive habitats on project by project basis	$10,000

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[1] *Refer to Integrated Trail Planning Guidelines for Wildlife, Recreation, and Fish Resources on the Mt. Hood NF (Sachet, 1990)*

Table Five-2 Monitoring Plan

Monitoring Element: Road Construction and Reconstruction

Question: Is an efficient and economical transportation system that responds to all other resources being provided?

Discussion: Roads that are necessary must be built in an environmentally sound manner and as planned.

Evaluation Question	**Measured Action/ Effect**	**Methods**	**Unit of Measure**	**Estimated Reliability**	**Information Collection Frequency**	**Report Period**	**Management Responsibility**	**Threshold of Variability**	**Estimated Annual Cost**
Is road construction/ reconstruction within projected levels?	Miles of road construction awarded	Report review	Miles of road	High	Annually	Annually	Forest Engineer	+/- 15% of average annual Forest Plan outputs	$6,000

Table Five-2 Monitoring Plan

Monitoring Element: Road Closures

Question: Are there an appropriate mix of roads open and closed to meet wildlife management considerations and roaded and unroaded recreation opportunities?

Discussion: In order to prevent harrassment to wildlife and meet desired future conditions for recreational use, road closures must meet Forest Plan Standards.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are system road densities following Standard & Guideline recommendations? Are non-system roads closed and has vegetative cover been re-established within the 10-yr. timeframe?	Number of open/closed roads	Field inspection report review	Miles of road/square mile	High	Annually	2 years	Forest Engineer/Timber Staff	+/- 5% variation between miles on non-system constructed and that revegetated in a 10-year period	$6,000

Table Five-2 Monitoring Plan

Monitoring Element: Road Management

Question: Is the Forest transportation system responsive to land management goals and public needs?

Discussion: Is public use consistent with expectations and are District Travel Management Plans consistent with Forest Standards & Guidelines?

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Are traffic volumes and traffic mixes consistent with expectations?	Volume of traffic	Traffic counts/trend analysis. Transp. System Inventory	Volume of traffic and number of miles of roads	Moderate	Annually	Annually	Forest Engineer	+/- 5% of combined total miles of the three classes of roads. 1) Roads closed year round. 2) Roads open to high clearance vehicles. 3) Roads open to passenger vehicles	$10,000

Table Five-2 Monitoring Plan

Monitoring Element: Road Maintenance

Question: Are the miles of transportation system being maintained in agreement with Forest Plan outputs?

Discussion: Miles of road maintained for passenger cars, high clearance vehicles and road closed within Forest Plan outputs.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
How many miles of road are being maintained for passenger cars, high clearance vehicles and closed?	Miles of road in ML 3-5 Miles of road in ML 2 Miles of road in ML 1	Report/ Review TIS Data Base	Miles of road	High	Annually	Annually	Forest Engineer	+/- 5% from Forest Plan Outputs	$1,000

Table Five-2 Monitoring Plan

Monitoring Element: Research Natural Areas

Question: Are Research Natural Areas being protected and inventoried for use as ecological reference points?

Discussion: RNA's are established as preserves and sources for data. They are valuable for research and long-range monitoring of the status of major components of ecosystems. Monitoring on RNAs serves two purposes: 1) to protect the value of the RNA as an ecological preserve and 2) to provide baseline data for monitoring the Forest's resources as well as for research and education.

Evaluation Question	Measured Action/ Effect	Methods	Unit of Measure	Estimated Reliability	Information Collection Frequency	Report Period	Management Responsibility	Threshold of Variability	Estimated Annual Cost
Is management preventing or minimizing disturbance to the RNA?	Vegetation and habitat conditions	Map and inventory vegetation and habitat factors	Species composition, vegetation structure, spacial distribution	Moderate	Annually	2 years	Ecology Staff	Changes in vegetation greater than natural variability	$9,000
Are more RNA's needed to serve as an ecological reference point for the Forest and scientific community?	Baseline data	Review database	Data set for each RNA	Moderate	Annual	2 years	Ecology Staff	Unfilled need for baseline vegetation inventory and mapping	$750

Amendments and Revisions

The Forest Plan will be kept valid and current through the use of amendments and revisions. The guidance for making these changes is in 36 CFR 219.10(f) and (g). As new issues and concerns arise, the Forest Plan will be amended or revised if needed.

The Forest Plan incorporates legal mandates, professional judgement and the public's stated concerns into a future vision of the Forest. It charts a path for getting there by developing management goals and objectives and translating them into management direction in the form of standards and guidelines for management areas on the Forest. National Forest planning is a dynamic process, and the products - Forest Plans - are similarly dynamic. Forest Plans can and should be modified if conditions warrant, as management goals are applied on the ground or goals and objectives, or activities the goals generate, may no longer be appropriate. In such instances, activities may be tailored to fit the resource, or planning objectives as stated in the Plan may be amended. Plans do not apply direction in site-specific management activities. It would be unrealistic and wrong to try to identify, analyze and schedule the myriad projects or activities that occur on a National Forest. Instead, this type of site-specific planning occurs at the project level planning stage, such as allotment management planning.

Plan Amendment

The Forest Supervisor may amend the Forest Plan. Based on an analysis of the objectives, standards, and other contents of the Plan, the Forest Supervisor shall determine whether a proposed amendment would result in a significant change. If the change resulting from the proposed amendment is determined to be significant, the Forest Supervisor shall follow the same procedure as that required for development and approval of a Forest Plan. If the change resulting from the amendment is determined not to be significant for the purposes of the planning process, the Forest Supervisor may implement the amendment following appropriate public notification and satisfactory completion of NEPA procedures.

Plan Revision

The Forest Plan shall ordinarily be revised on a 10-year cycle or at least every 15 years. It also may be revised whenever the Forest Supervisor determines that conditions or demands in the area covered by the Plan have changed significantly or when changes in Resource Planning Act policies, goals, or objectives would have a significant effect on Forest level programs. In the monitoring and evaluation process, the Interdisciplinary Team may recommend a revision of the Forest Plan at any time. Revisions are not effective until considered and approved in accordance with the requirements for the development and approval of the Forest Plan. The Forest Supervisor shall review the conditions on the land covered by the Plan at least every five years to determine whether conditions or demands of the public have changed significantly.

When the monitoring process indicates that the threshold tolerance has exceeded expectations established in the Monitoring Plan, a decision process as outlined on the following page must be followed.

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Through this process, a decision can be made in a systematic manner as to what action to take in respect to:

- Referring problems to the appropriate Line Officer for corrective action or adjustment of a program or outputs.
- Revising the schedule of outputs.
- Revising the budget.
- Initiating a significant amendment of the Forest Plan.
- Initiating a revision of the Forest Plan.

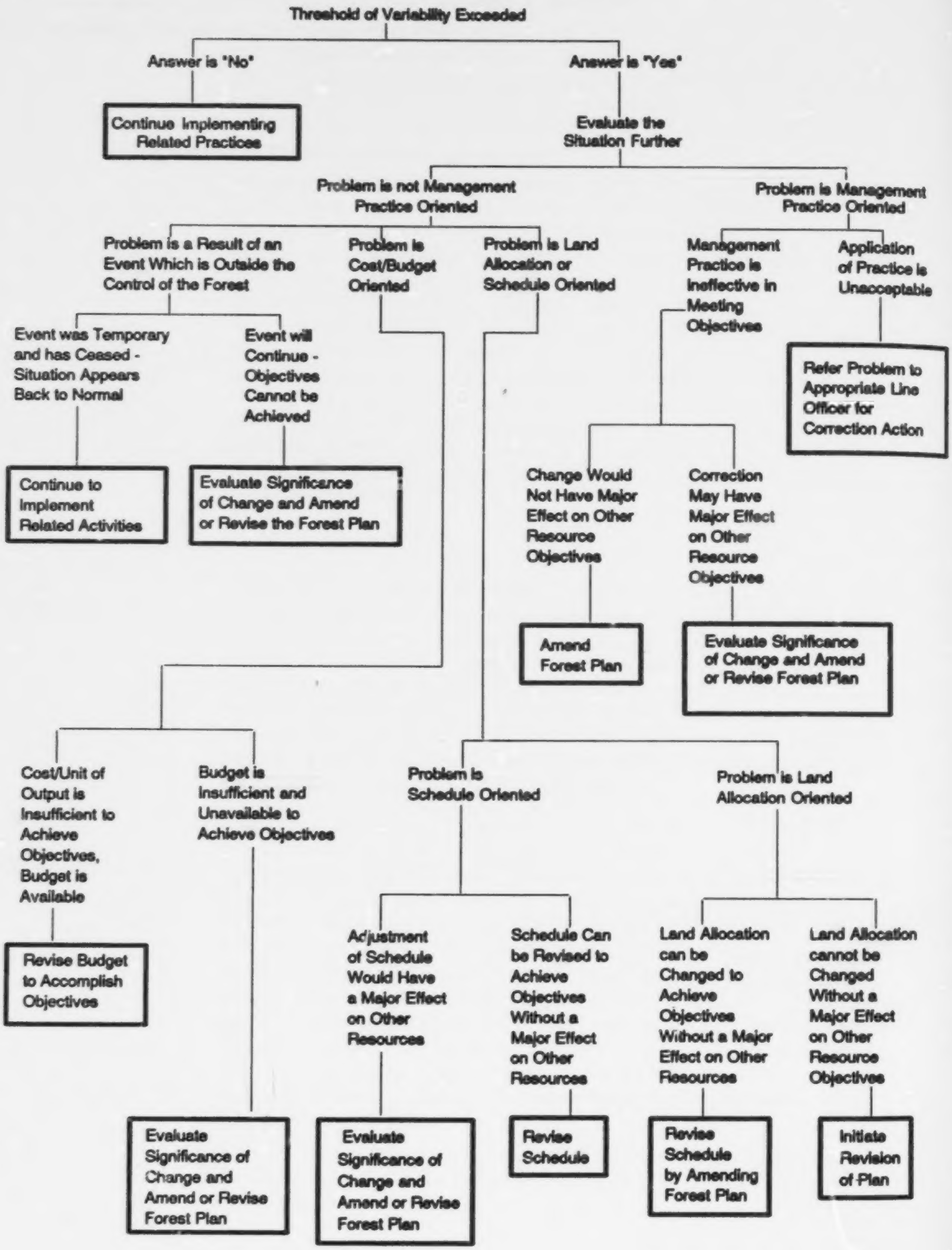

Figure Five-1 Decision Flow Diagram

Threshold of Variability Exceeded
Answer is "No"
Answer is "Yes"
Continue Implementing Related Practices
Evaluate the Situation Further
Problem is not Management Practice Oriented
Problem is Management Practice Oriented
Problem is a Result of an Event Which is Outside the Control of the Forest
Problem is Cost/Budget Oriented
Problem is Land Allocation or Schedule Oriented
Management Practice is Ineffective in Meeting Objectives
Application of Practice is Unacceptable
Event was Temporary and has Ceased - Situation Appears Back to Normal
Event will Continue - Objectives Cannot be Achieved
Refer Problem to Appropriate Line Officer for Correction Action
Continue to Implement Related Activities
Evaluate Significance of Change and Amend or Revise the Forest Plan
Change Would Not Have Major Effect on Other Resource Objectives
Correction May Have Major Effect on Other Resource Objectives
Amend Forest Plan
Evaluate Significance of Change and Amend or Revise Forest Plan
Cost/Unit of Output is Insufficient to Achieve Objectives, Budget is Available
Budget is Insufficient and Unavailable to Achieve Objectives
Problem is Schedule Oriented
Problem is Land Allocation Oriented
Revise Budget to Accomplish Objectives
Adjustment of Schedule Would Have a Major Effect on Other Resources
Schedule Can be Revised to Achieve Objectives Without a Major Effect on Other Resources
Land Allocation can be Changed to Achieve Objectives Without a Major Effect on Other Resources
Land Allocation cannot be Changed Without a Major Effect on Other Resource Objectives
Evaluate Significance of Change and Amend or Revise Forest Plan
Evaluate Significance of Change and Amend or Revise Forest Plan
Revise Schedule
Revise Schedule by Amending Forest Plan
Initiate Revision of Plan

Appendix A

Multi-Year Implementation Schedules

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Appendix A

Multi-Year Implementation Schedules

The following implementing schedules are shown in this Appendix.

☐ Soil and Water Improvement
☐ Fish Habitat Improvement
☐ Timber Sale Schedule
☐ Road and Bridge Construction/Reconstruction
☐ Recreation Improvements - Campgrounds, Day Use Facilities, Interpretive Services
☐ Social Economic Analysis
☐ Wilderness Implementation Plans
☐ Wildlife Projects
☐ Historic Structure Restoration
☐ Cultural Resource Activities
☐ Trail Construction/Reconstruction
☐ Range Allotment Planning/Range Management
☐ Administrative Facilities
☐ Special Interest Area Implementation Plans
☐ Wild and Scenic Rivers
☐ Viewshed Implementation Guides
☐ Research Natural Area
☐ Key Site Riparian Area Implementation Plans
☐ Special Emphasis Watershed Impact Assessments
☐ Fire Management
☐ Land Ownership Adjustment

Introduction

The projects identified in this Appendix depict the activities which are necessary to achieve the outputs and desired future condition described in the Forest Plan. The project outputs on a year-to-year basis may differ from what is displayed. However, over the 10-year period, the annual deviations will be compensating.

The cost of implementation of these projects, with the addition of general administration and monitoring costs, approximates the budget required to implement this Plan. If budgets are significantly less than those contained in this Plan, some projects will not be accomplished, resulting in a reduction in expected outputs, and the corresponding objectives of the Plan may not be met.

It is expected that the schedules will require updating annually as a result of the budget process and new action plans.

The Forest Supervisor has authority to change the implementation schedule to reflect differences between proposed annual budgets and actual appropriated funds. As a result, outputs and activities in individual years may differ from those projected in the Forest Plan. Significant deviations that alter the long-term relationships between goods and services projected in the Forest Plan will result in an amendment or revision of the Forest Plan.

Implementation Schedules

Soil and Water Improvement

District	Project Name	Fiscal Year	Project Activity	Cost	Outputs
Barlow	Ward Fertilization	1991	Site Productivity	8,000	27 acres
	Road 2730-170	1991	Road Drainage	5,000	5 acres
	Road 4440 @ 5 mile	1991	Road Drainage	3,000	2 acres
	Road 2700	1991	Cutbank Stabilize	4,000	3 acres
	Hazel #10 Road	1992	Road Obliteration	2,000	2 acres
	Ward Roads	1992	Road Drainage	1,500	3 acres
	Badger Lake Road	1992	Road Drainage	4,000	5 acres
	Road 2700	1992	Cutbank Stabilization	3,000	3 acres
	Road 48 & 4880 Jct.	1992	Cutbank Stabilization	2,500	3 acres
	North District	1993	Ripping/Site prod.	5,000	30 acres
	Barlow Road 3530	1993	Road Drainage	5,000	10 acres
	Keeps Mill Road 4885	1993	Road obliteration	6,000	2 acres
	S & W Maintenance	1993	Maintenance/Evaluation	3,000	3 acres
	Watershed Inventory	1994	Needs inventory	4,000	1 inventory
	South District	1994	Site Productivity	5,000	30 acres
	South District	1994	Raod Oblit./Site Prod.	4,000	10 acres
	Gate Ck. Rehab.	1994	Channel Improvement	7,000	10 acres
	S & W Maintenance	1994	Maintenance/Evaluation	3,000	3 projects
	North District	1995	Road Oblit./Site Prod.	4,000	10 acres
	Road 4431	1995	Channel Improvement	2,000	1 acre
	8 mile Road	1995	Road Obliteration	3,000	3 acres
	S & W Maintenance	1995	Maintenance/Evaluation	4,000	2 projects
	District-wide	1996-2000	Misc. Rehab. Projects	50,000	50 acres
Bear Springs	Stone Creek	1991	Road Drainage Control	10,000	20 acres
	Oak Grove	1991	Road Cutbank Stabilization	10,000	30 acres
	Barlow Butte	1992	Road Cutbank Stabilization	5,000	15 acres
	Alps	1992	Compaction Ripping	14,000	14 acres
	McCubbins	1993	ORV Erosion Control	20,000	30 acres
	Camas	1993	Meadow Rehab	10,000	8 acres
	S & W Maintenance	1993	Maintenance/Evaluation	3,000	3 projects
	Watershed Inventory	1994	Needs Inventory	4,000	1 inventory
	Barlow Road	1994	Culvert Repair	16,000	8 sites
	Dinger Creek	1994	Compaction Ripping	10,000	10 acres
	S & W Maintenance	1994	Maintenance/Evaluation	3,000	3 projects
	White River	1995	Stream Rehab	8,000	4 miles
	Frog Ditch	1995	Gully Rehab	12,000	6 acres
	S & W Maintenance	1995	Maintenance/Evaluation	3,000	3 projects
	District-wide	1996-2000	Misc. Rehab. Projects	50,000	50 acres

Implementation Schedules

Soil and Water Improvement (continued)

District	Project Name	Fiscal Year	Project Activity	Cost	Outputs
Clackamas	Clackamas River Road	1991	Road Cut & Fill Stabilization	18,000	27 acres
	Granite Peaks	1991	Compaction Rehabilitation	15,000	15 acres
	Planets	1992	Compaction Rehabilitation	20,000	20 acres
	Buckeye	1992	Gully Rehabilitation	12,000	4 acres
	Planets	1993	Compaction Rehabilitation	20,000	20 acres
	Olallie	1993	Road Cut & Fill Stabilization	16,000	24 acres
	S & W Maintenance	1993	Maintenance/Evaluation	3,000	3 projects
	Watershed Inventory	1994	Needs Inventory	4,000	1 inventory
	Sluice	1994	Gully Rehabilitation	14,000	6 acres
	Pinhead	1994	Compaction Rehabilitation	17,000	17 acres
	S & W Maintenance	1994	Maintenance/Evaluation	3,000	3 projects
	Blitzen Creek	1995	Road Cut & Fill Stabilization	12,000	8 acres
	Graham Pass	1995	Road Cut & Fill Stabilization	8,000	10 acres
	S & W Maintenance	1995	Maintenance/Evaluation	3,000	3 projects
	District-wide	1996-2000	Misc. Rehab. Projects	50,000	50 acres
Columbia Gorge	Road 1200224	1991	Road Drainage Rehabilitation	7,000	6 acres
	Road 1000016	1991	Road Drainage Rehabilitation	2,000	4 acres
	Road 1027	1992	Headcut & Slump Stabilization	10,000	16 acres
	Work Center	1992	Gulley Rehabilitation	2,000	5 acres
	Nanny Creek	1993	Gulley Rehabilitation	10,000	3 acres
	S & W Maintenance	1993	Maintenance/Evaluation	3,000	3 projects
	Watershed Inventory	1994	Needs Inventory	4,000	1 inventory
	Camp Creek	1994	Road Cut & Fill Stabilization	8,000	12 acres
	Bull Run	1994	Compaction Rehabilitation	6,000	8 acres
	S & W Maintenance	1994	Maintenance/Evaluation	3,000	3 projects
	Little Sandy	1995	Road Drainage Rehabilitation	10,000	16 acres
	S & W Maintenance	1995	Maintenance/Evaluation	3,000	3 projects
	District-wide	1996-2000	Misc. Rehab. Projects	50,000	50 acres

Implementation Schedules

Soil and Water Improvement (continued)

District	Project Name	Fiscal Year	Project Activity	Cost	Outputs
Estacada	Fish Creek Rehab.	1991	Landing Pullback	14,000	7 acres
	Third Creek	1991	Landing Pullback	10,000	5 acres
	Wash Creek	1991	Landing Pullback	4,000	2 acres
	North Creek	1991	Compaction Ripping	8,000	16 acres
	Pup Creek	1992	Landing Pullback	6,000	3 acres
	Hot Springs Fork	1992	Landing Pullback	12,000	6 acres
	Indian Henry	1992	Compaction Ripping	10,000	20 acres
	Third Creek	1993	Gully Restoration	14,000	5 acres
	Hugh Creek	1993	Landing Pullback	10,000	5 acres
	S & W Maintenance	1993	Maintenance/Evaluation	3,000	3 projects
	Watershed Inventory	1994	Needs Inventory	4,000	1 inventory
	Collawash	1994	Gully Restoration	16,000	4 acres
	Indian Henry	1994	Compaction Ripping	10,000	20 acres
	S & W Maintenance	1994	Maintenance/Evaluation	3,000	3 projects
	Wanderers	1995	Landing Pullback	6,000	3 acres
	Fish Creek Road	1995	Road Cut & Fill Stabilization	20,000	20 acres
	S & W Maintenance	1995	Maintenance/Evaluation	3,000	3 projects
	District-wide	1996-	Misc. Rehab. Projects	100,000	250 acres
Hood River	Nottingham C.G.	1991	Site Productivity Rehab	5,000	10 acres
	Road 2840-630	1991	Road Obliteration	7,000	12 acres
	Road 1330	1991	Road Obliteration	5,000	3 acres
	Moiser Creek Rehab.	1991	Channel Improvement	5,000	4 acres
	Robinhood C.G.	1992	Channel Improvement	3,000	2 acres
	Road 3500-680	1992	Wet Area Rehab.	1,000	1 acre
	Gibson Prarie	1992	Meadow Restoration	3,000	4 acres
	Tilly Jane Creek	1992	Channel Improvement	3,100	4 acres
	Road 1711-660	1992	Road Drainage Rehab.	3,000	3 acres
	East Fork dispersed	1992	Streambank Improvement	4,000	5 acres
	Newton Creek/sh 35	1993	Road Obliteration	3,000	2 acres
	Hellroaring Creek	1993	Channel Improvement	3,500	4 acres
	Road 18 Powerline	1993	Erosion Control	1,500	1 acre
	Road 2810-650	1993	Erosion Control	2,500	2 acres
	S & W Maintenance	1993	Maintenance/Evaluation	3,000	3 projects
	Watershed Inventory	1994	Needs Inventory	4,000	1 inventory
	Road 1310-642	1994	Road Drainage	2,400	1 acre
	Robinhood Creek	1994	Channel Stabilization	1,500	2 acres
	S & W Maintenance	1994	Maintenance/Evaluation	3,000	3 projects
	Eastside Ripping	1995	Soil Productivity	4,000	20 acres
	S & W Maintenance	1995	Maintenance/Evaluation	5,000	3 projects
	District-wide	1996-2000	Misc. Rehab. Projects	50,000	50 acres

Implementation Schedules

Soil and Water Improvement (continued)

District	Project Name	Fiscal Year	Project Activity	Cost	Outputs
Zigzag	N. Fork Eagle Creek	1991	Road Obliteration	400	1 acre
	Clear Fork Sandy River	1991	Cutbank Stabilization	200	1 acre
	Camp Creek	1991	Bank and Pond Rehab.	300	1 project
	Camp Creek	1991	Road & Channel Rehab.	5,600	1 project
	Camp Creek Road	1992	Slope/Streambank	2,800	1 project
	Salmon River FSR 2618	1992	Erosion Control/Riprap	10,000	1 project, 100 feet
	Camp Creek	1993-95	Maintenance/Evaluation	1,300	monitoring
	Mud Creek	1993	Road/Skid Trail Rehab.	9,500	15 acres
	Hwy 26, T-Line Road, 6 locations	1993	Drip Irrigation revegetating cutbanks	2,000	3 acres
	Upper Still Creek (Hwy 26 constr.)	1990-1999	Erosion Control, Sediment Reduction	50,000	5+ acres
	Lost Creek/Cast Creek	1993	Road Drainage Rehab.	11,200	1 project
	S & W Maintenance	1993	Maintenance Evaluation	3,000	3 projects
	Watershed Inventory	1994	Needs Inventory	4,000	1 inventory
	Unnamed Sandy Trib.	1994	Drainage Improvement	2,100	1 acre
	Lost Creek Trib.	1994	Cutbank Rehab/Soil Ripping/Planting	2,450	1.5 acres
	S & W Maintenance	1994	Maintenance/Evaluation	3,000	3 projects
	Clear Creek Trib.	1994-96	Culvert/Road Drainage	2,800	0.5 miles
	Clear Creek & Tribs.	1994-96	Riparian Planting	1,000	1 acre
	Muddy Fork POA var. locations	1995	Cutbank, Instream, and Road Rehab	4,000	2 acres
	S & W Maintenance	1995	Maintenance/Evaluation	3,000	3 projects
	District-wide	1996-2000	Misc. Rehab. Projects	50,000	50 acres

Implementation Schedules

Fish Habitat Improvement

District	Project Name	Fiscal Year	Cost (MS)	Outputs Structures
Barlow	Fifteenmile Creek	1991	55	100
	Ramsey Creek	1992	54	85
	Rock Creek	1993	67	90
	Tygh Creek	1994	64	80
	Gate Creek	1995	35	40
	White River	1996	74	85
	White River	1997	85	100
	White River	1998	78	87
	White River	1999	55	50
	Fifteenmile Creek	2000	54	38
Bear Springs	Clear Creek	1991	55	100
	Frog Creek	1992	54	85
	Barlow Creek	1993	67	90
	Buck Creek	1994	64	80
	Bonney Creek	1995	35	40
	Iron Creek	1996	74	85
	White River	1997	85	100
	White River	1998	78	87
	White River	1999	55	50
	Alpine Creek	2000	54	38
Clackamas	Oak Grove Fork	1991	55	100
	Pinhead Creek	1991	50	30
	Cub Creek	1991	74	50
	Round Lake	1991	30	25
	Pyramid Lake	1991	40	25
	Buck Lake	1991	40	25
	Shellrock Lake	1991	40	25
	Upper Oak Grove Fork	1992	54	85
	Clackamas River	1992	85	100
	Collawash River	1992	67	90
	Bump Lake	1992	30	25
	Fish Lake	1992	40	25
	Sportsman, West	1992	40	25
	Hunter Creek	1993	70	85
	Si Lake	1993	45	25
	Cripple Creek	1993	50	30
	Cottonwood Meadows	1993	45	25
	Collawash River	1994	64	80
	Mag Creek	1995	35	40

Implementation Schedules

Fish Habitat Improvement (continued)

District	Project Name	Fiscal Year	Cost (MS)	Outputs Structures
Clackamas (continued)	Lowe Creek	1997	85	100
	Falls Creek	1998	78	87
	Buckeye Creek	1999	55	50
	Tag/Tar Creek	2000	54	38
Columbia Gorge	Horsetail Creek	1992	54	85
	Multnomah Creek	1993	67	90
	Lindsey Creek	1994	64	80
	Viento Creek	1995	35	40
Estacada	Hot Springs Fork	1991	55	100
	Hot Springs Fork	1992	54	85
	Nohorn Creek	1993	78	87
	Hugh Creek	1994	55	50
	Pansy Creek	1995	54	38
	Collawash River	1996	67	90
	Collawash River	1997	64	80
	Roaring River	1998	65	40
	N. Fork Clackamas	1999	74	85
	N. Fork Clackamas	2000	85	100
Hood River	Lake Branck creek	1991	55	100
	Lake Branch Creek	1992	54	85
	West Fork Hood River	1993	67	90
	West Fork Hood River	1994	64	80
	Neal Creek	1995	35	40
	Tony Creek	1996	74	85
	East Fork Hood Trib.	1997	85	100
	East Fork Hood Trib.	1998	78	87
	Middle Fork Hood	1999	55	50
	Middle Fork Hood	2000	54	38
Zigzag	Camp Creek	1991	55	100
	Trillium Lake	1991	10	10
	Camp Creek	1992	55	100
	Clear Creek	1992	55	100
	Enid Lake	1992	15	20
	Clear Fork	1993	54	85
	Lady Creek	1993	67	90
	Little sandy	1994	64	80

Implementation Schedules

Fish Habitat Improvement (continued)

District	Project Name	Fiscal Year	Cost (MS)	Outputs Structures
Zigzag (continued)	Boulder Creek	1995	35	40
	Zigzag River	1995	35	40
	So. Fork Salmon River	1996	74	85
	Mirror Lake	1996	15	10
	Still Creek	1998	78	87
	Lost Creek	1999	55	50
	Cheeney Creek	2000	54	38

Implementation Schedules

Timber Sale Action Plan - Fiscal Year 1991

District	Project Name	Fiscal Year	Location	Management Area	Volume 1,000 BdFt	Road Miles		Harvest Method
						Const.	Reconst.	
Barlow	Found Creek Low Boulder	1991	T4S, R10E Sec. 10,11,14,23,26	C1	8,000		1	220,121 110,140
	Scout Eight Mile	1991	Road 44	B2	3,300	1.1	4.3	110,121
	SSF Sales	1991			700			NA
Bear Springs	Pistol Resell	1991	T3S,R9E Sec. 24-26,36	B2			.1	NA
	Broodtree Resell	1991	T5S,R9E Sec. 1,2,12,36	C1	4,000			111
	Jigsaw	1991	T4S,R9E Sec. 30,36	C1	10,000	1.7	1.0	110
	Rockbutte Resell	1991	T6S,R8E Sec. 3,4,9,10	C1			5.1	NA
	Lase	1991	T3S,R9E Sec. 25,36	B2	7,000	2.0	2.0	110,220
	Anewtt	1991	T5S,R8E Sec. 9,10,14,15	C1	4,000	1.0	1.0	143,131
	Flatfish	1991	T4S,R9E		2,000			NA
	Diablo	1991	T6S,R8E Sec. 3,10	C1	3,000	1.0		NA
	Salvage	1991	District-wide		2,000		1.0	NA
Clackamas	Granite Quartz	1991	T6S,R6E	C1	1,400	1.3	1.4	NA
			Sec. 25,26 T6S,R7E Sec. 30-32	B2				NA
	Cot/Cork	1991			2,700	1.4	1.0	NA
	Sluice Slide/Eastrun	1991	T6S,R6E Sec. 27,35,36	B8	5,000	1.2	.2	NA

Implementation Schedules

Timber Sale Action Plan - Fiscal Year 1991 (continued)

District	Project Name	Fiscal Year	Location	Management Area	Volume 1,000 BdFt	Road Miles		Harvest Method
						Const.	Reconst.	
Clackamas (continued)	Sheep Springs/Legume	1991	T6S,R8E Sec. 4,5,8-10,15-17,20	C1	6,500	1.0		110
	Pyramid/Sphinx	1991	T5S,R8E Sec. 10-14	B2	16,300	5.2	.5	110
	Lemiti/Conehead	1991	T8S,R8E Sec. 10-12, 12-16	B3/B11	12,500	6.1	3.5	NA
	Northrun	1991			1,500			
	SI	1991	T8S,R8E		1,200		2.6	
	BI	1991	T8S,R8E		3,500		6.5	
	Salvage	1991	District-wide		12,100			
Columbia Gorge	Homestead CG	1991	T2S,R7E, + 10,570 T2S,R6E		2.2	3.0		110,131
	Bellows Salvage	1991	T1N,R6E		1,000			
	Blowdown Year 4	1991			10,000			NA
Estacada	Impasse	1991	T7S,R5E Sec. 31,32	C1				
	Farm POA	1991	T7S,R6E Sec. 9,10,15,16	B8	10,000	1.0	2.0	110
	Nuisance SSF Blowdown	1991	T6S,R6E Sec. 29,31-32	C1	2,500			160,110
	Lone SSF Blowdown	1991	T3,4,5S R6E,T5S,R6E		1,400			160,110
	Cod SSF Blowdown	1991	T6S,R5E,T7S,R5E		1,700			110
	Fish POA	1991	T6E,R5E,R6E					
	Bogus POA	1991	T7S,R6E Sec. 8-9,16-17	B2/B8	500	1.0	3.0	110

Implementation Schedules

Timber Sale Action Plan - Fiscal Year 1991 (continued)

District	Project Name	Fiscal Year	Location	Management Area	Volume 1,000 BdFt	Road Miles		Harvest Method
						Const.	Reconst.	
Estacada (continued)	Big POA	1991	T6S,R6E Sec. 3,10,15	B8	0			110
	Skin POA	1991	T7S,R5E Sec. 22,27	C1	5,000	.5		110
	Trout POA	1991	T6S,R6E Sec. 9,22	B8	1,500	1.0	2.0	110
	Nohorn POA	1991	T7S,R5E		2,300	1.0	3.0	110
	Whet POA	1991	T8S,R5E		2,000	1.0	2.0	110
	Memaloose SSF Blowdown	1991	T5S,R5E		1,200			110
	Ling SSF Blowdown	1991	T5S,R5E		800			110
Hood River	Canoe	1991	T1S,R81/2E Sec. 24,25	C1	3,300	2.4	1.6	110
	Rainy POA	1991	T2N,R8E		4,600			131,110, 141,220
	Polallie POA	1991			1,500			NA
	Blowdown Salvage	1991			1,500			151
Zigzag	Munch	1991	T3S,R6E,S Sec. 19-20,29-30	B6	1,500			231
	Homestead ZZ	1991	T2S,R7E Sec. 17	C1	1,000			110
	North Salvage	1991	T2S,R7E Sec. 19	B2	150			231
	Alpine 2	1991	T3S,R9E Sec.8,17	B2	650			110
	RD 19 SSF	1991	T3S,R7E Sec. 2 & 3	B2	500			230

Implementation Schedules

Timber Sale Action Plan - Fiscal Year 1991 (continued)

District	Project Name	Fiscal Year	Location	Management Area	Volume 1,000 BdFt	Road Miles		Harvest Method
						Const.	Reconst.	
Zigzag (continued)	North Boulder/Norte	1991	T2S,R7E Sec. 16-18,20-21	C1	3,100			150,220
	Clear Creek/Calypso	1991	T2S,R8E		3,600	.6	3.0	NA
	Hickman/Little Clear Creek	1991	T2S,R7E,T2S,R8E		3,000	.7	2.0	NA
Forest Total					186,570	34.4	54.5	

110 Clearcut

131 Shelterwood Seed Cut

141 Shelterwood Removal Cut

151 Tree Selection Cut

160 Partial Removal

220 Commercial Thinning

230 Sanitation (salvage)

231 Mortality HSV

Implementation Schedules

Road and Bridge Construction/Reconstruction Capital Investment

Project Name	Project Number	Fiscal Year	Cost (1,000's)	Const./ Reconst.	Output (Miles)
Clackamas River	46	1991	2,300 (1,000)*	Reconst.	3.6
Lost Lake C.G. II	1341	1991	1,337	Reconst.	0.7
Campground Overlays	Various (6)	1991	100	Reconst.	1.7
Still Creek	12	1991	120	Reconst.	0.1
Lolo Pass + Bridge	18	1992	640	Reconst.	3.5
Lost Lake C.G. III	1341	1992	289	Reconst.	0.3
Bull Run River	10	1992	325	Reconst.	2.4
Eliot Bridge	2840	1992	75	Reconst.	1 ea.
Junction Bridge	5400160	1992	150	Reconst.	1 ea.
Dufur Mill	44	1992	900	Reconst.	6.2
Mt. Hood Meadows	3555	1993	1,500	Reconst.	0.6
White River	48	1993	500	Reconst.	4.7
Divers Cr. Bridge	13	1994	255	Reconst.	1 ea.
Lake Branch	13	1994	275	Reconst.	7.5
Long Prairie	17	1994	200	Reconst.	2.0
Trillium Lake	2656	1994	70	Reconst.	1.4
Wear Creek Bridge	5400160	1994	100	Reconst.	1 ea.
Falls Cr. Wall	10	1994	80	Reconst.	0.2
Breitenbush Bridges	4220	1994	55	Reconst.	2 ea.
Sumitt Lodgepole	Various	1995	250	Reconst.	9.3
Still Creek Road	12	1995	200	Reconst.	8.5
Enola Hill	2627207	1995	100	Reconst.	3.8
Preachers Peak Br.	1015	1995	100	Reconst.	1 ea.
Salmon River	2618	1995	300	Reconst.	2.0
Old Maid Flats	1825	1995	250	Reconst.	2.8
Lemiti	4220	1995	134	Reconst.	1.8
Homestead Bridge	14	1995	70	Reconst.	1 ea.

Implementation Schedules

Road and Bridge Construction/Reconstruction Capital Investment (continued)

Project Name	Project Number	Fiscal Year	Cost (1,000's)	Const./ Reconst.	Output (Miles)
Abbott	58	1996	180	Reconst.	2.3
Brooks Meadow & Jnct 117	44	1996	370	Reconst.	5.3
Devils 1/2 Acre Br.	3530	1996	60	Reconst.	2 ea.
Collawash-Toms Meadow	63	1996	900	Reconst.	2.8
Last Creek Bridge	4230	1996	125	Reconst.	1 ea.
Lake Branch East	13	1996	500	Reconst.	5.0
Green Point	2820	1996	250	Reconst.	13.0
Oak Grove Fk.	57	1997	2,600	Reconst.	7.2
Clackamas-Austin	46	1998	1,500	Reconst.	3.2
Coe Creek Bridge	2840	1998	150	Reconst.	1 ea.
Clackamas-Carrigans Curve	46	1999	2,000	Reconst.	5.0
Skyline	42	1999	1,300 (650)**	Reconst.	8.7
Collawash-Buckeye	63	2000	1,200	Reconst.	3.8
Cedar Burn	43	2000	710	Reconst.	5.8

** 1 Million dollars of purchaser credit through merged funding will be programmed to reduce the appropriated dollar needs.*

*** 650 thousand dollars as their share of the project will come from the Confederated Tribes of the Warm Springs.*

Note: Road construction and reconstruction miles for timber sale activities are shown with the timber sale listing.

Implementation Schedules

Campgrounds

District	Project Name	Fiscal Year	Project Activity	Cost ($M)
Columbia Gorge	Lower Eagle Creek Overlook	1995-96	Rehabilitate Historic Building	75
	Ruckel Creek Group	1997-98	Build Campground & Trailhead	415
Hood River	Lost Lake	1991-93	Rebuild & Expand	1300
	Robin Hood	1995-97	Rehabilitate	122
Zigzag	Host Sites	1995-96	Electrical/Sept Facilities-4 campground	156
	Alpine	1997-98	Reconstruct access New Toilet	36
	McNeil	1994-96	Expand and rehabilitate	110
	Riley Horse Camp	1995-97	Expand	91
Clackamas	Corridor Analysis	1995-99		5160
	Harriet	1992-93	Rehabilitate new picnic area	504
	Rainbow/Ripplebrook	1996-98	Rehabilitate	165
	Riverside	1996-98	Rehabilitate	76
	Raab	1995-97	Expand dev. group site	117
	Alder flat	1996-98	Rehabilitate	21
	Riverford	1996-96	Drill well/Rehabilitate	71
	Peninsula	1995-97	Rehabilitate	102
	Paul Dennis	1997-98	Rehabilitate	76
	Lower Lake	1998-99	Rehabilitate	41
	Camp 10	1998-20	Redesign	116
	Olallie Meadow	1995-97	Improve parking	60
	Breitenbush	1997-99	Rebuild CCC Bldgs.	67
	Horseshoe	1997-99	Rehabilitate	48
	Hideaway Lake	1995-97	Replace toilets	47
	Roundlake	1995-96	Rehabilitate	42
	Cub Creek	1998-20	New	255
	Shellrock	1997	Replace toilets	20
Barlow	Rock Creek dump station	1995-97	Construct	43
	Knebal Springs	1996-98	Reconstruct	81
	Badger Lake	1995-98	Construct new/Reconstruct old	101
	Bonney Crossing	1996-98	Expansion	62
	Bonney Meadows	1997-99	Reconstruct	61

Implementation Schedules

Campgrounds (continued)

District	Project Name	Fiscal Year	Project Activity	Cost ($M)
Bear Springs	Oak Grove, Frog Lake, Clear Lake Toilets	1995-96	Construct barrier free	51
	Timothy Lake dump station	1992-95	Construct	44
	Timothy Lake parking	1997-99	Expansion	223
	Pine Point	1996-97	Expansion	210
	Timothy Lake Dispersed camping	1997-99	Build	27
	Timothy Lake	1998-20	New	490
	Clackamas Lake	1997-99	Convert campground to equestrian	50
	Joe Graham, Clackamas Lale, Oak Grove Fk. C.G.	1999	Campground reconstruction	20
Estacada	Carter Bridge	1996-98	Redesign/Reconstruct	107
	No Horn	1998-20	New	218
	Lazy Bend	1997-99	Redesign	99
	Fish Creek	1997-99	Redesign	57
	Indian Henry	1997-98	Construct playground	21
	District toilets	1995-96	Replace roofs	20
	Wasterwater dumps	1995	Reconstruct	41
	Indian Henry showers	1995-97	Rebuild system	53
	Pegleg Falls	1997-99	Rebuild	211
	Kingfisher	1996-98	Rebuild	272
Forestwide	Water system	1993	Feasibility Study	16
	Toilets	1993	Feasibility Study	11
	Water system	1994	Survey and design	170
	Toilets	1994	Survey and design	23

Implementation Schedules

Day Use Facilities

District	Project Name	Fiscal Year	Project Activity	Cost ($M)
Bear Springs	Timothy Lake, Clear Lake boat docks	1995-97	Construct	41
Clackamas	Two Rivers picnic	1997-98	Rehabilitate	64
	Olallie Lake picnic	1998	Rebuild boat dock	5
Columbia Gorge	Wahkeena Bicycle	1997	Construct	275
	Top of Mult. Falls Overlook	1992-93	Build Platform	24
Hood River	Sherwood picnic area	1996-97	Convert campground to picnic	122
Estacada	Clackamas River	1995-97	Build 2 boat launches	29
	Sunstrip picnic	1995-97	Convert campground	54
	Carter Bridge picnic	1997-99	Redesign 10 sites	64
	Big Eddy picnic	1996-98	Upgrade	60
Zigzag	Timberline Lodge	1993-94	Feasibility, survey & design	89

Implementation Schedules

Interpretive Services

District	Project Name	Fiscal Year	Project Activity	Cost ($M)
Clackamas	Bagby, Big Eddy, Pegleg Falls campground signing	1995	Install	6
Columbia Gorge	Oneota Gorge viewpoint	1997-98	Construct display & parking l	97
Zigzag	WyEast Day Lodge interpretation	1990-93	Construct Center	165
Hood River	Road 44 snowplay	1995-96	Construct	48

Implementation Schedules

Socio-Economic Analysis

Project Name	Fiscal Year	Project Activity	Cost ($M)
Mt. Hood NF Socio-economic Overview	1991	Update/Supervisor's Office	5.0
Mt. Hood NF Socio-economic Overview	1994	Update/Supervisor's Office	5.0
Mt. Hood NF Socio-economic Overview	1997	Update/Supervisor's Office	5.0
Mt. Hood NF Socio-economic Overview	2000	Update/Supervisor's Office	5.0

Implementation Schedules

Wilderness

District	Project Name	Fiscal Year	Project Activity	Cost ($M)
Barlow	Badger Creek	1991	Trail Plan development	5.0
			Trail counters installation	2.5
			Cultural Resource surveys	1.0
			Non-conforming structure removal	5.0
			Revegetation projects	2.0
		1992	Trail plan development	5.0
			Trail counters installation	2.5
			Cultural Resource surveys	1.0
			Non-conforming structure removal	5.0
			Revegetation projects	2.0
			Fire Mgt. Plans development	12.5
		1993	Cultural Resource surveys	1.0
			Non-conforming structure removal	5.0
			Revegetation projects	2.0
			Fire Mgt. Plans	12.5
		1994	Cultural Resource surveys	1.0
			Revegetation projects	2.0
		1995	Cultural Resource surveys	1.0
			Revegetation projects	2.0
		1996	Cultural Resource surveys	1.0
			Revegetation projects	2.0
		1997	Cultural Resource surveys	1.0
			Revegetation projects	2.0
		1998	Cultural Resource surveys	1.0
			Revegetation projects	2.0
		1999	Cultural Resource surveys	1.0
			Revegetation projects	2.0
		2000	Cultural Resource surveys	1.0
			Revegetation projects	2.0

Implementation Schedules

Wilderness (continued)

District	Project Name	Fiscal Year	Project Activity	Cost ($M)
Estacada	Bull of the Woods	1992	Trail counter installation	3.5
			Cultural Resource swings	12.5
			Revegetation projects	0.6
		1993	Cultural Resource swings	12.5
			Revegetation projects	0.6
			Wildlife & plant resource assessments	25.0
		1994	Non-conforming structure removal	5.0
			Revegetation projects	0.6
			Fire Mgt. Plans development	25.0
		1995	Revegetation projects	0.6
		1996	Revegetation projects	0.6
		1997	Revegetation projects	0.6
		1998	Revegetation projects	0.6
		1999	Revegetation projects	0.6
		2000	Revegetation projects	0.6
				2.0
Columbia Gorge	Columbia	1991	Trail Plan development	7.5
			Trail counters installation	6.0
			Cultural Resource surveys	1.0
			Non-conforming structures removal	3.3
			Revegetation projects	4.0
			Wahtum Lake areas assessment	5.0
			Wildlife & plants resource assessments	5.0
		1992	Trail Plan development	7.5
			Trail counters installation	6.0
			Cultural Resource surveys	1.0
			Non-conforming structures removal	3.3
			Revegetation projects	4.0
			Lakes assessments	50.0
			Fire Mgt. Plan development	12.5
			Gate installation	10.0
			Wildlife & Plants resource assessments	5.0

Implementation Schedules

Wilderness (continued)

District	Project Name	Fiscal Year	Project Activity	Cost ($M)
Columbia Gorge (continued)	Columbia	1993	Cultural Resource surveys	1.0
			Non-conforming structures removal	3.3
			Revegetation projects	4.0
			Lakes assessments	50.0
			Fire Mgt. Plan development	12.5
			Wildlife & Plants resource assessments	5.0
		1994	Cultural Resource surveys	1.0
			Revegetation projects	4.0
			Lakes assessments	50.0
			Wildlife & Plants resource assessments	5.0
		1995	Cultural Resource surveys	1.0
			Revegetation projects	4.0
		1996	Cultural Resource surveys	1.0
			Revegetation projects	4.0
		1997	Cultural Resource surveys	1.0
			Revegetation projects	4.0
		1998	Cultural Resource surveys	1.0
			Revegetation projects	4.0
		1999	Cultural Resource surveys	1.0
			Revegetation projects	4.0
		2000	Cultural Resource surveys	1.0
			Revegetation projects	4.0
Zigzag/ Hood River	Mt. Hood	1991	Trail Ploan development	7.5
			Trail counter installation	9.0
			Cultural Resource surveys	7.5
			Revegetation projects	4.0
		1992	Trail Ploan development	7.5
			Cultural Resource surveys	7.5
			Non-conforming structures removal	5.0
			Revegetation projects	4.0

Implementation Schedules

Wilderness (continued)

District	Project Name	Fiscal Year	Project Activity	Cost ($M)
Zigzag/ Hood River (continued)	Mt. Hood	1993	Non-conforming structure removal	5.0
			Revegetation projects	4.0
			Wildlife & plants resource assessments	35.0
		1994	Revegetation projects	9.0
			Lake assessments	10.0
			Fire Mgt. Plans development	25.0
			Climbing assessment	20.0
		1995	Revegetation projects	4.0
			Lake assessments	10.0
			Fire Mgt. Plans development	25.0
		1996	Revegetation projects	4.0
		1997	Revegetation projects	4.0
		1998	Revegetation projects	4.0
		1999	Revegetation projects	4.0
		2000	Revegetation projects	4.0
Zigzag	Salmon-Huckleberry	1991	Trail counter installation	7.5
			Revegetation projects	1.6
		1992	Trail Plan development	5.0
			Cultural Resource surveys	10.0
			Revegetation projects	1.6
		1993	Trail Plan development	5.0
			Non-conforming structures	2.5
			Revegetation projects	1.6
			Wildlife & plants resource assessments	40.0

Implementation Schedules

Wilderness (continued)

District	Project Name	Fiscal Year	Project Activity	Cost ($M)
Zigzag (continued)	Salmon-Huckleberry	1994	Non-conforming structures	2.5
			Revegetation projects	1.6
			Fire Mgt. Plans development	12.5
		1995	Revegetation projects	1.6
			Fire Mgt. Plans development	12.5
		1996	Revegetation projects	1.6
		1997	Revegetation projects	1.6
		1998	Revegetation projects	1.6
		1999	Revegetation projects	1.6
		2000	Revegetation projects	1.6

Implementation Schedules

Wildlife Projects

District	Funding Source	Fiscal Year	Project Activity	Number	Cost ($1,000's)
Various	Challenge Cost Share	1991	Structures	3	30
			Acres treated	251	
			Reports	3	
			Fencing-Miles	2	
Various	Collected-KV	1991	Structures	13,665	1,273
			Acres treated	4,837	
			Reports	8	
			Fencing-Miles	10	
Various	Appropriated	1991	Structures	3,117	389
			Acres treated	3,738	
			Reports	137	
Various	Challenge Cost Share	1992	Structures	3	51
			Acres treated	21	
			Reports	2	
Various	Collected-KV	1992	Structures	14,081	1,717
			Acres treated	4,710	
			Reports	10	
Various	Appropriated	1992	Structures	2,675	401
			Acres treated	3,764	
			Reports	63	
Various	Challenge Cost Share	1993	Structures	13	29
			Acres treated	23	
			Fencing-Miles	2	
			Reports	2	
Various	Collected-KV	1993	Structures	23,967	1,722
			Acres treated	7,397	
			Reports	13	
			Fence-Miles	5	
Various	Appropriated	1993	Structures	2,912	426
			Acres treated	3,914	
			Reports	62	
			Fence-Miles	5	

Implementation Schedules

Wildlife Projects (continued)

District	Funding Source	Fiscal Year	Project Activity	Number	Cost ($1,000's)
Various	Challenge Cost Share	1994	Structures	13	22
			Acres treated	23	
			Reports	2	
			Fence-Miles	2	
Various	Collected-KV	1994	Structures	15,420	1,860
			Acres treated	7,379	
			Reports	13	
			Fence-Miles	5	
Various	Appropriated	1994	Structures	3,362	404
			Acres treated	3,906	
			Reports	59	
			Fence-Miles	5	
Various	Challenge Cost Share	1995	Structures	3	20
			Acres treated	25	
			Reports	2	
			Fence-Miles	2	
Various	Collected-KV	1995	Structures	13,104	1,544
			Acres treated	7,796	
			Reports	7	
			Fence-Miles	5	
Various	Appropriated	1995	Structures	3,348	393
			Acres treated	3,793	
			Reports	59	
			Fence-Miles	5	
Various	Challenge Cost Share	1996	Structures	3	57
			Acres treated	23	
			Reports	2	
Various	Collected-KV	1996	Structures	10,529	1,172
			Acres treated	846	
			Reports	4	
			Fence-Miles	5,848	
Various	Appropriated	1996	Structures	2,753	313
			Acres treated	3,646	
			Reports	40	

Implementation Schedules

Wildlife Projects (continued)

District	Funding Source	Fiscal Year	Project Activity	Number	Cost ($1,000's)
Various	Challenge Cost Share	1997	Structures	3	13
			Acres treated	23	
			Reports	2	
Various	Collected-KV	1997	Structures	121	1,094
			Acres treated	17,102	
			Reports	4	
			Fence-Miles	1	
Various	Appropriated	1997	Structures	2,752	297
			Acres treated	3,391	
			Reports	41	
Various	Challenge Cost Share	1998	Structures	3	13
			Acres treated	23	
			Reports	2	
Various	Collected-KV	1998	Structures	10,529	1,161
			Acres treated	6,694	
			Reports	4	
			Fence-Miles	1	
Various	Appropriated	1998	Structures	2,752	297
			Acres treated	3,646	
			Reports	40	
Various	Challenge Cost Share	1999	Structures	3	13
			Acres treated	23	
			Reports	2	
Various	Collected-KV	1999	Structures	10,529	1,161
			Acres treated	6,694	
			Reports	4	
Various	Appropriated	1999	Structures	2,752	297
			Acres treated	3,646	
			Reports	40	
Various	Challenge Cost Share	2000	Structures	3	13
			Acres treated	23	
			Reports	2	

Implementation Schedules

Wildlife Projects (continued)

District	Funding Source	Fiscal Year	Project Activity	Number	Cost ($1,000's)
Various	Collected-KV	2000	Structures	10,527	1,161
			Acres treated	6,553	
			Reports	1	
			Fence-Miles	1	
Various	Appropriated	2000	Structures	2,747	297
			Acres treated	3,643	
			Reports	31	
Various	Challenge Cost Share	2001	Structures	3	13
			Acres treated	23	
			Reports	2	
Various	Collected-KV	2001	Structures	7,746	1,161
			Acres treated	6,694	
			Reports	4	
Various	Appropriated	2001	Structures	2,752	297
			Acres treated	3,646	
			Reports	40	

Structures: Include items such as perches, enclosures, nest boxes, etc.

Acres Treated: Includes seeding, planting, burning

Reports: Includes monitoring, evaluation, inventory, management plans

Fencing:

Implementation Schedules

Historic Structure Restoration

Project Name	Fiscal Year	Project Description	Cost ($M)
Mt. Hood National Forest (General)		This position would perform and maintain historic structure inventories and surveys. Prepare, develop and C.O.R. contracts for historic structures.	
Columbia Gorge R.D.			
Eagle Creek Overlook	1992	Rehabilitate	60
Eagle Creek Shelter	1992	Prepare project manual	3
	1993	Perform areas of work outlined in the FY91 "project manual."	40
Eagle Creek Register	1994	Prepare project manual	2
	1995	Perform areas of work outlined in the FY91 "project manual."	10
Big John Restroom	1992	Perform areas of work outlined in the Wilson Architects project manual (1990) for the Big John Restroom.	10
Clackamas R.D.			
Oak Grove Complex	1991	Prepare feasibility/action plan.	40
	1994-98	Perform restorations.	500
Hawke Mtn. Cabin	1993	Renovation	5
Breitenbush Shelters (2)	1993	Rehabilitate 2 stone and wood shelters.	10
Olallie Guard Station	1993	Repair sone chimney, windows and screens, replace door.	15
Olallie Meadows Cabin	1993	Repair stone chimney, replace roof and end wall shakes.	15
Bear Springs R.D.			
J.Graham Horse Barn	1991	Replace rotted sill logs/replumb walls, windows and doors.	15
Clackamas Gas House	1992	Repair canopy headers and posts.	15
Bear Springs Meadow Shelter	1994	Prepare project manual.	10
Zigzag R.D.			
Tollgate Shelter	1991	Perform areas of work, via a national training session.	40
Sandy Guard Station	1992	Prepare a project manual.	10
	1993	Renovate	70
Zigzag Admin. Site	1992	Prepare a project management plan.	40
	1996-98	Rehabilitate	300

Implementation Schedules

Historic Structure Restoration			
Project Name	**Fiscal Year**	**Project Description**	**Cost ($M)**
Hood River R.D.			
Parkdale Work Center	1991	Prepare a project management plan	42
	1999-2000	Perform areas of work defined in the project manual.	300
Mt. Hood NF (Misc.)			
Fire Lookouts	1991	Prepare project manuals.	60
	1993-95	Perform the work outlined in the project manuals.	300
Misc. Historic Structures		Prepare project manuals.	100

Implementation Schedules

Cultural Resources

District	Project Name	Fiscal Year	Project Activity	Cost ($M)
	Misc. Projects	1991	Inventory	30.0
Columbia Gorge	Multnomah Falls Naturalist Bldg.	1991	Evaluation	5.0
	Warrendale Houses (4)	1991	Evaluation	40.0
	Apex Site	1991	Evaluation	10.0
Zigzag	Pioneer Bridle Trail	1991	Evaluation	8.0
Clackamas	Clackamas River Trail	1991	Evaluation	5.0
	Lookouts & Guard Station	1991	Thematic Evaluation	20.0
	Civilian Conservation Coops Era Rec. Sites	1991	Thematic Evaluation	15.0
	Misc. Historic Struct.	1991	Site Mgt. Plan development	30.0
	Oak Grove Complex	1991	Site Mgt. Plan development	15.0
Bear Springs	Clackamas Lake Guard Station	1991	Site Mgt. Plan development	10.0
Zigzag	Zigzag Ranger Station (Admin. Site)	1991	Site Mgt. Plan development	20.0
Columbia Gorge	Work Center Stone Wall	1991	Stabilization/Rehabilitation	10.0
	Big John Restroom	1991	Stabilization/Rehabilitation	10.0
Bear Springs	Bear Spring Meadow Shelter	1991	Stabilization/Rehabilitation	40.0
Zigzag	Tollgate Shelter	1991	Stabilization/Rehabilitation	40.0
	Pioneer Bridle Trail Underpass	1991	Stabilization/Rehabilitation	5.0
ZZ-BS-BM	Barlow Road Interp. & Celebration	1991	Enhancement/Interpretation	100.0
	Misc. individual Small projects	1991	Enhancement/Interpretation	5.0
	Survey Design Evaluation	1991	Overviews/Cultural Res. Mgt. Studies	60.0
	Misc. Projects	1992	Inventory	30.0
	Wilderness	1992	Inventory	10.0
Columbia Gorge	Wyeth House	1992	Evaluation	3.0
Estacada	Clackamas River Trail Site	1992	Evaluation	30.0
Bear Springs	Devil's Half Acre	1992	Evaluation	5.0
	Klinger's Camp	1992	Evaluation	5.0
Barlow	Rock Shelter	1992	Testing & Evaluation	40.0
Bear Springs	Clear Creek	1992	Testing & Evaluation	5.0
	Camas Prairie	1992	Testing & Evaluation	8.0
Nood River	Ladd Creek	1992	Testing & Evaluation	5.0
Zigzag	Swim Resort	1992	Testing & Evaluation	20.0
	Historic Mining	1992	Thematic Evaluation	12.0
	Rock Cairns & Quests	1992	Thematic Evaluation	45.0
	Clackamas River Drainage Sites	1992	Thematic Evaluation	40.0
Estacada	Bagby Guard Station	1992	Historic Struct. Mgt. Plan	5.0

Implementation Schedules

Cultural Resources (continued)

District	Project Name	Fiscal Year	Project Activity	Cost ($M)
Zigzag	Sandy Guard Station	1992	Historic Struct. Mgmt. Plan	15.0
	Fire Lookouts (9 sites)	1992	Historic Struct. Mgmt. Plan	15.0
	Individual Bldgs. (2)	1992	Data Recovery/Documentation	14.0
Columbia Gorge	Eagle Creek Overlook	1992	Stabilization/Rehabilitation	60.0
Bear Springs	Joe Grahm Horse Barn	1992	Stabilization/Rehabilitation	15.0
	Clackamas Lake Gas House	1992	Stabilization/Rehabilitation	15.0
Zigzag	Laurel Hill Chute	1992	Stabilization/Rehabilitation	20.0
Bear Springs	White River Station	1992	Stabilization/Rehabilitation	5.0
Columbia Gorge	Apex	1992	Enhancement/Interpretation	5.0
Zigzag	Pioneer Bridle Trail	1992	Enhancement/Interpretation	5.0
BAR-BS-ZZ	Barlow Road/OR Trail	1992	Enhancement/Interpretation	500.0
Zigzag	Pioneer Bridge Trail Signing	1992	Enhancement/Interpretation	5.0
	Individual Small Projects	1992	Enhancement/Interpretation	15.0
Estacada	LaDee Logging Co. Sites	1992	Enhancement/Interpretation	6.0
	Bagby Guard Station	1992	National Register Nomination	1.0
	Oral Histories	1992	Overviews/CRM Studies	9.0
	History of Winter Sports & Mtn. Climbing on Mt. Hood	1992	Overviews/CRM Studies	5.0
	Misc. Projects	1993	Inventory	30.0
	Special INterest Areas	1993	Inventory	5.0
	Wild & Scenic River Corridors	1993	Inventory	5.0
Zigzag	Muddy/Clear Forks Site	1993	Evaluation	8.0
Clackamas	Daylight	1993	Testing & Evaluation	15.0
Estacada	Indian berry Camp	1993	Testing & Evaluation	8.0
Est-BS	Abbot road	1993	Testing & Evaluation	5.0
	Wilderness Shelters	1993	Thematic Evaluation	15.0
	Peeled Cedars & Basket Trees	1993	Thematic Evaluation	45.0
Zigzag	Ski Bowl warming Hut	1993	Historic Struct. Mgt. Plan	3.0
Hood River	Parkdale Work Center	1993	Historic Struct. Mgt. Plan	15.0
Columbia Gorge	Eagle Creek Campground	1993	Historic Struct. Mgt. Plan	25.0
Zigzag	Pioneer Bridge Trail & Features	1993	Historic Struct. Mgt. Plan	10.0
Columbia Gorge	Multnomah Falls Naturalist Building	1993	Data Recovery/Documentation	10.0
Clackamas	Hawk Mtn. Lookout cabin	1993	Stabilization/Rehabilitation	5.0
	Olallie/Brietenbush struct.	1993	Stabilization/Rehabilitation	25.0
	Olallie Meadows Cabin	1993	Stabilization/Rehabilitation	15.0
Hood River	Lost Lake Adirondacks	1993	Stabilization/Rehabilitation	40.0
Columbia Gorge	Eagle Creek Shelter	1993	Stabilization/Rehabilitation	40.0
Zigzag	Sandy Guard Station	1993	Stabilization/Rehabilitation	70.0
	Fire Lookouts (9 sites)	1993	Stabilization/Rehabilitation	100.0
Columbia Gorge	Apex Site & Trail	1993	Enhancement/Interpretation	15.0
	Individual Small Projects	1993	Enhancement/Interpretation	25.0
	Admin. History of Mt. Hood NF	1993	Overviews/CRM Studies	20.0

Implementation Schedules

Cultural Resources (continued)

District	Project Name	Fiscal Year	Project Activity	Cost ($M)
	Misc. Projects	1994	Inventory	30.0
	Wilderness	1994	Inventory	10.0
	Misc. Sites/Buildings	1994	Evaluation	3.0
Bear Springs	Keys Mill Area Sites	1994	Testing & Evaluation	10.0
Columbia Gorge	Warrendale Camery/Kelly Mill	1994	Testing & Evaluation	20.0
Bear Springs	Bear Springs Meadow Shelter	1994	Historic Struct. Mgt. Plan	15.0
Zigzag	Timberline Lodge/Silcox Hut	1994	Historic Struct. Mgt. Plan	20.0
Columbia Gorge	Oneonta Bridge & Tunnel	1994	Historic Struct. Mgt. Plan	10.0
Barlow	Gate Creek	1994	Data Recovery/Documentation	90.0
Estacada	Pegleg Falls	1994	Data Recovery/Documentation	80.0
Hood River	Tilly Jane Cookhouse	1994	Stabilization/Rehabilitation	60.0
Zigzag	Pioneer Bridle Trail Underpass	1994	Stabilization/Rehabilitation	50.0
Columbia Gorge	Wahkeena Stone Bridge	1994	Stabilization/Rehabilitation	80.0
	Fire Lookouts (9 sites)	1994	Stabilization/Rehabilitation	100.0
Bear Springs	Key Mills Area Sites	1994	Enhancement/Interpretation	5.0
	High Rock Area	1994	Enhancement/Interpretation	5.0
	Individual Small Projects	1994	Enhancement/Interpretation	15.0
Estacada	Clackamas River Trail Site	1994	Enhancement/Interpretation	5.0
	Historic Preservation Plan	1994	Overviews/CRM Studies	50.0
	Oral Histories (2)	1994	Overviews/CRM Studies	6.0
	Misc. Projects	1995	Inventory	30.0
	Special INterest Areas	1995	Inventory	5.0
	Wild & Scenic River Corridors	1995	Inventory	5.0
Columbia Gorge	Latourelle Falls Road & Lumber Co.	1995	Testing & Evaluation	5.0
BAR-BS	Bennett Pass Road	1995	Testing & Evaluation	5.0
	IWilderness Sites (3)	1995	Testing & Evaluation	15.0
Columbia Gorge	The Dalles-Sandy Military Road	1995	Testing & Evaluation	15.0
	Indian Camps & Trails	1995	Thematic Evaluation	40.0
	Lumbermill Sites	1995	Thematic Evaluation	15.0
Hood River	Cloud Cap/Tilly Jane Historic Dist.	1995	Historic Struct. Mgt. Plan	10.0
Columbia Gorge	The Dalles-Sandy Military Road	1995	Historic Struct. Mgt. Plan	5.0
Clackamas	Olallie-Breitenbush Area	1995	Historic Struct. Mgt. Plan	5.0
Barlow	Kinzel Mine	1995	Stabilization/Rehabilitation	15.0
Estacada	Holtway Trail Shelter	1995	Stabilization/Rehabilitation	10.0
Columbia Gorg	Eagle Creek Registration Bldg.	1995	Stabilization/Rehabilitation	10.0
	Fire Lookouts (9 Sites)	1995	Stabilization/Rehabilitation	100.0
	Warrendale camery/Kelly Mtn.	1995	Enhancement/Interpretation	15.0
	Individual Small Projects	1995	Enhancement/Interpretation	10.0
	Oneonta Bridge & Tunnel	1995	Enhancement/Interpretation	5.0
Zigzag	Ski Bowl Warming Hut	1995	National Register Nomination	1.0
	Overview Updates	1995	Overviews/CRM Studies	40.0
	Cascadian architecture	1995	Overviews/CRM Studies	5.0

Implementation Schedules

Cultural Resources (continued)

District	Project Name	Fiscal Year	Project Activity	Cost ($M)
	Misc. Projects	1996-2000	Inventory	100.0
	Wilderness	1996-2000	Inventory	20.0
	Special Interest Areas	1996-2000	Inventory	10.0
	Wild & Scenic River Corridors	1996-2000	Inventory	5.0
	Misc. Sites & Bldgs. (5)	1996-2000	Evaluations	15.0
	Big Bottom	1996-2000	Testing & Evaluation	15.0
	Wilderness sites	1996-2000	Testing & Evaluation	25.0
	Railroad Logging & Lumber Industry	1996-2000	Thematic Evaluations	25.0
	Roads, Trails & Telephone Lines	1996-2000	Thematic Evaluations	10.0
	Civilian Conservation corps Camps	1996-2000	Thematic Evaluations	20.0
	Columbia Gorge Work Center	1996-2000	Historic Structure Mgt. Plan	8.0
	Summit Guard Station	1996-2000	Historic Structure Mgt. Plan	5.0
	Tolgate	1996-2000	Data Recovery/Documentation	70.0
	White River Station	1996-2000	Data Recovery/Documentation	60.0
	Summit Meadows	1996-2000	Data Recovery/Documentation	100.0
	Misc. Individual sites	1996-2000	Data Recovery/Documentation	80.0
	Misc. Individual Bldgs.	1996-2000	Data Recovery/Documentation	35.0
	Dietzel Mine	1996-2000	Stabilization/Rehabilitation	10.0
	Cloud Cap Inn	1996-2000	Stabilization/Rehabilitation	100.0
	Ski bowl Warming Hut	1996-2000	Stabilization/Rehabilitation	30.0
	Oneonta Bridge & Tunnel	1996-2000	Stabilization/Rehabilitation	13.0
	Oak Grove Complex	1996-2000	Stabilization/Rehabilitation	500.0
	Parkdale Work Center	1996-2000	Stabilization/Rehabilitation	300.0
	Zigzag Admin. Site	1996-2000	Stabilization/Rehabilitation	300.0
	Keys Mill Area	1996-2000	Enhancement/Interpretation	5.0
	Misc. Individual Projects	1996-2000	Enhancement/Interpretation	5.0
	Other Nominations	1996-2000	National Register Nominations	
	Oral Histories (2)	1996-2000	Overview/CRM Studies	6.0
	Industry Histories (2)	1996-2000	Overview/CRM Studies	10.0
	Biographies (Key Persons)	1996-2000	Overview/CRM Studies	5.0
	Ethnographis Studies	1996-2000	Overview/CRM Studies	10.0

Implementation Schedules

Trail Construction/Reconstruction - First Five Years

Project Name	Fiscal Year	Project Activity	Cost ($M)
Old Growth	1991	1.1 miles construction	121
Mirror Lake	1991	3.4 miles reconstruction	47
Burnt Lake	1991	7.8 miles reconstruction	64
CR/Camptown	1991	3.9 miles construction	53
Bonanza Trail	1991	1.4 miles construction	30
Bonanza Bridge	1991	0.1 miles construction	58
Salmon River Seg. II	1991	14.0 miles reconstruction	63
Perdition	1991	0.9 miles reconstruction	24
Gorge Trail	1991	3.8 miles reconstruction	58
Wyeth	1991	2.0 miles reconstruction	42
Elowah Bridge	1991	0.1 miles reconstruction	8
Timothy Lake	1992	25.0 miles reconstruction	35
McCubbins OHV	1992	31.6 miles reconstruction	65
Trillium Lake Loop	1992	1.1 miles construction	72
Alder Flat	1992	1.0 miles construction	90
Clackamas river Seg. I	1992	8.0 miles construction	141
PCT Barlow Pass	1992	5.2 miles reconstruction	20
Old Skyline Group	1992	5.8 miles reconstruction	34
White River Seg I	1992	8.3 miles reconstruction	66
Bath House Bridge	1992	0.1 miles reconstruction	25
Hot Springs Fork Bridge	1992	0.1 miles reconstruction	22
Kingsley/Whatum	1992	3.7 miles reconstruction	22
Return Trail	1992	0.6 miles reconstruction	63
Oneonta Seg. I	1992	2.7 miles reconstruction	50
Wyeth Bridge	1992	0.1 miles reconstruction	15
Lake Shore	1993	3.2 miles reconstruction	125
Horseshoe	1993	5.6 miles reconstruction	88
Cast Creek	1993	3.7 miles reconstruction	43
PCT BS I & II	1993	7.2 miles reconstruction	80
West Zigzag Mtn.	1993	2.4 miles reconstruction	43
Paradise Park	1993	5.8 miles reconstruction	92
Boulder Ridge	1993	4.7 miles reconstruction	53
Eight Mile Loop	1993	4.0 miles reconstruction	28
Alder Flats Bridge I	1993	0.1 miles reconstruction	14
Larch Mtn. Seg II	1993	5.6 miles reconstruction	75
PCT I	1993	6.6 miles reconstruction	54
Nesmith Point	1993	4.6 miles reconstruction	62
Whatum Lake	1993	0.6 miles reconstruction	44
Whatum Lake bridge	1993	0.1 miles reconstruction	44
Oneonta Seg. II	1993	3.9 miles reconstruction	45
Sherrard Point	1993	0.3 miles reconstruction	106

Implementation Schedules

Trail Construction/Reconstruction - First Five Years (continued)

Project Name	Fiscal Year	Project Activity	Cost ($M)
Eagle Creek	1994	5.0 miles reconstruction	80
PCT	1994	3.8 miles reconstruction	65
Huckleberry Mtn.	1994	1.8 miles reconstruction	11
Laurance Lake H. Loop	1994	4.0 miles construction	29
Roar. River/Splinter	1994	8.0 miles construction	101
Paradise Loop	1994	2.6 miles reconstruction	30
Pollalie Falls	1994	1.0 miles construction	19
PCT-Muddy Fork	1994	5.5 miles reconstruction	48
Wallalute Falls	1994	0.5 miles construction	12
Timberline/Eliot	1994	0.8 miles reconstruction	8
Laurance Lake Loop	1994	4.0 miles construction	38
Coffman Saddle	1994	1.5 miles construction	16
Top Spur	1994	0.5 miles reconstruction	10
Badger Rim	1994	4.5 miles construction	49
Motherload	1994	2.5 miles reconstruction	50
Timberline Cairn	1994	2.0 miles reconstruction	19
Alder Flats BR II	1994	0.1 miles reconstruction	16
Trail 400 East	1994	14.0 miles reconstruction	396
PCT II	1994	14.2 miles reconstruction	118
Ruckel Bridge	1994	0.1 miles reconstruction	9
Eagle Creek II	1994	8.0 miles reconstruction	94
Gorge Trail (Dodson)	1994	7.0 miles reconstruction	63
Laurel Hill Chute	1995	1.0 miles construction	90
Summit Meadows	1995	2.0 miles construction	84
Bald Mtn.	1995	2.5 miles reconstruction	25
Rho Ridge	1995	7.0 miles reconstruction	28
Little Badger	1995	2.7 miles reconstruction	12
Slide Mtn. View	1995	2.5 miles construction	32
Elk Lake Trail	1995	8.9 miles reconstruction	68
Bagby 544	1995	12.4 miles reconstruction	23
Winter Dispersed	1995	4.0 miles construction	23
Page Ski Trails	1995	2.0 miles construction	14
Timothy Lake High Rock	1995	5.5 miles construction	28
Geronimo	1995	2.0 miles reconstruction	38
Corral Springs	1995	3.0 miles reconstruction	7
Grouse Point	1995	3.0 miles reconstruction	34
Clackamas River II	1995	5.0 miles construction	101
Tanner Creek	1995	3.4 miles reconstruction	109
Eagle/Tanner	1995	5.0 miles reconstruction	44
Talapus Route	1995	4.0 miles construction	95
Ruckel Creek Trail	1995	5.8 miles reconstruction	40
Horsetail Creek	1995	5.6 miles reconstruction	64
Indian Springs	1995	2.0 miles reconstruction	29

Implementation Schedules

Trail Construction Reconstruction - Second Five Years

Project Name	Fiscal Year	Project Activity	Cost ($M)
Shellrock Lake		Reconstruction	
Tygh Creek Trail		Reconstruction	
Rock Creek Lake Loop		Construction	
Stone Creek		Reconstruction	
Cripple creek		Reconstruction	
Douglas Cabin		Construction	
Big Eddy		Reconstruction	
Batty Butte		Reconstruction	
Timothy Lake		Reconstruction	
Dickey Creek		Reconstruction	
Roaring River Basin		Construction	
Boundary Trail		Reconstruction	
Whetstone		Reconstruction	
Barlow Butte		Reconstruction	
Round Lake		Construction	
White River Seg III		Construction	
Lake Lenore		Construction	
Fifteen Mile		Reconstruction	
Indian Henry/Carter		Construction	
Lake Branch Group		Construction	
Robin Hood Trail		Construction	
Lava Beds		Construction	
Coe Branch		Construction	
Salmon River Trail		Construction	
Linney Creek Trail		Construction	
Rock Creek Lake		Construction	
Boulder/White Loop		Construction	
Boulder Creek Tie		Construction	
Badger Bonney trail		Construction	
Crane Creek Trail		Construction	
Scouts Trail		Reconstruction	
Wampus Springs		Construction	
White River East		Construction	
Jack pot Meadows		Reconstruction	
Old Baldy		Reconstruction	
Eagle Creek Cutoff		Reconstruction	
Eagle Creek Butte		Reconstruction	
Timberline		Reconstruction	
Glade Ski		Reconstruction	
Kinzel		Reconstruction	
Umbrella Falls		Reconstruction	
Veda Lake		Reconstruction	
Fir Tree		Reconstruction	
Castle Canyon		Reconstruction	
Flag Mountain		Reconstruction	

Implementation Schedules

Trail Construction/Reconstruction - Second Five Years (continued)

Project Name	Fiscal Year	Project Activity	Cost ($M)
Devils Tie		Reconstruction	
Yocum Ridge		Reconstruction	
Lost Creek		Reconstruction	
Hidden Lake		Reconstruction	
Still Creek		Reconstruction	
Douglas Trail		Reconstruction	
McIntyre		Reconstruction	
Plaza		Reconstruction	
Bonanza		Reconstruction	
Salmon Butte		Reconstruction	
Cool Creek		Reconstruction	
Pioneer Bridle		Reconstruction	
Cast Lake		Reconstruction	
Ramona Falls		Reconstruction	
Mountaineer		Reconstruction	
Old Salmon		Reconstruction	
Wauna Viewpoint		Reconstruction	
Moffett Creek		Reconstruction	
Tanner Butte		Reconstruction	
Larch Mtn. X/C Ski		Construction	
Rucket Falls		Construction	
Gorge (Horsetail)		Construction	
Herman Bridge		Reconstruction	
Gorton Creek Falls		Construction	
Herman Cutoff		Reconstruction	
Vista Point		Reconstruction	
Wahkeena		Reconstruction	
Devils Rest		Reconstruction	
Deadwood		Reconstruction	
Oneonta		Reconstruction	
Franklin Ridge		Reconstruction	
Ridge Cutoff		Construction	
Horsetail Falls		Reconstruction	
Eagle Creek		Reconstruction	
Larch Mountain		Reconstruction	
Mult. Creek Way		Reconstruction	
Mult. Creek Spur		Reconstruction	
Nick Eaton		Reconstruction	
Tanner Cutoff		Reconstruction	
Bell Creek Way		Reconstruction	
Lower Herman Creek		Construction	
Summit Meadows		Construction	
Barlow Road Chute Trail		Construction	

Implementation Schedules

Trailhead/Snopark Capital Investment Program - First Five Years

District	Project Name	Fiscal Year	Project Activity	Cost ($M)
Bear Springs	Frog Lake SP	1992	Reconstruction	485
Clackamas	Alder Flat TH	1993	Construction	12
Bear Springs	White River TH	1993	Construction	65
?	Douglas TH	1993	Construction	18
?	Glacier View SP	1993	Reconstruction	42
Barlow	Eight Mile TH	1993	Reconstruction	24
Zigzag	Trillium SP	1993	Construction	70
	Old Maid Flats SP	1993	Construction	100
Hood River	Whatum Lake TH	1993	Construction	46
Hood River	Laurance Lake TH	1994	Construction	15
	Pollalie Falls TH	1994	Construction	20
?	Wallalute Falls TH	1994	Construction	17
Barlow	Little Badger TH	1994	Reconstruction	22
Bear Springs	McCubbins OHV TH	1994	Construction	74
?	Bottle Prairie TH	1994	Construction	30
ZZ_BS	Hwy 35/26 SP	1994	Construction	180
Hood River	Lost Lake Butte TH	1995	Reconstruction	12
?	Lower Lake TH	1995	Reconstruction	10
Bear Springs	Skyline SP	1995	Construction	64
?	Top Spur TH	1995	Reconstruction	12
Clackamas	Riverside NRT TH	1995	Construction	20
Zigzag	Zigzag Mt. TH	1995	Construction	25
Bear Springs	Clear Lake SP	1995	Construction	140
BS-ZZ	Pioneer Womans Grave	1996	Construction	60
Zigzag	McIntyre Ridge TH	1996	Construction	30
?	Tamanawas	1996	Reconstruction	60
Hood River	Cloundcap TH	1996	Reconstruction	66
Zigzag ?	Alps SP	1996	Construction	120
Zigzag	Lolo Pass TH	1996	Construction	20
?	Surveyors TH	1996	Construction	18
?	Clinger Spring TH	1996	Construction	25

Implementation Schedules

Trailhead/Snopark Capital Investment Program - Second Five Years

District	Project Name	Fiscal Year	Project Activity	Cost ($M)
Bear Springs	Salmon river SP		Construction	
Hood River	Lava Beds TH		Construction	
?	Elk Cove TH		Construction	
?	White River East SP		Construction	
Clackamas	Shellrock TH		Reconstruction	
?	Vista Ridge TH		Construction	
Hood River	McGee Creek TH		Construction	
?	Washout TH		Construction	
Zigzag	Ramona Falls TH		Construction	
	Salmon River TH 1		Reconstruction	
	Salmon River TH 2		Reconstruction	
	Salmon Butte South		Reconstruction	
	Salmon Butte North		Reconstruction	
	Burnt Lake TH I		Reconstruction	
	Burnt lake TH II		Reconstruction	

Implementation Schedules

Range Allotment Planning

District	Project Name	Fiscal Year	Project Activity	Cost ($M)
Bear Springs	Wapinitia	1991	Allotment resource analysis	12.0
Barlow	Grasshopper	1992	Allotment resource analysis	12.0
Bear Springs	Wapinitia	1992	Allotment Management Plan (AMP)	6.0
Hood River	Long Prairie	1993	Allotment resource analysis	12.0
Barlow	Grasshopper	1993	AMP	6.0
Bear Springs	White River	1994	Allotmenfdt resource analysis	12.0
Hood River	Long Prairie	1994	AMP	6.0
Barlow	Badger	1995	Allotment resource analysis	12.0
Bear Springs	White River	1995	AMP	6.0
Bear Springs	Clackamas	1996	Allotment resource analysis	12.0
Barlow	Badget	1996	AMP	6.0
Bear Springs	Clackamas	1997	AMP	

Implementation Schedules

Range Management

Allotment	Activity	1991 Units/Cost	1992 Units/Cost	1993 Units/Cost	1994 Units/Cost	1995 Unit/Cost
White River	Noxious weed control (acres)	50/2500	50/2500	50/2500	50/2500	50/2500
	Cattleguard (structures)	21/13000	21/13000	21/13000	21/13000	21/13000
	Fence (miles)	4/24000	4/24000	4/24000	4/24000	4/24000
	Water Developments (struc.)	2/5000	2/5000	1/3000	1/1000	1/1000
	Maintenance (structures)	1/500	1/500	1/500	1/500	1/500
Wapinitia	Noxious weed control (acres)	50/2500	50/2500	50/2500	50/2500	50/2500
	Cattleguard (structures)	2/16000	1/8000	1/8000	1/8000	1/8000
	Fence (miles)	4/24000	4/24000	4/24000	4/24000	4/24000
	Water Developments (struc.)	1/1000		1/1000		
	Misc. Projects (structures)	1/2000		1/600		
	Burning/brush control (acres)	4/50	4/50	4/50	1/13	
	Maintenance (structures)	1/500	1/500	1/500	1/500	1/500
Clackamas Lake	Noxious weed control (acres)	50/2500	50/2500	50/2500	50/2500	50/2500
	Cattleguard (structures)	2/16000	2/13000	2/13000	1/13000	1/8000
	Fence (miles)	3/18000	3/18000	2/12000	2/12000	2/12000
	Water Developments (struc.)	1/1000		1/1000		
	Burning/brush control (acres)	2/25	2/25	2/25	2/25	2/25
	Misc. Projects (structures)	1/400	1/4000	1/1000	1/1500	
	Maintenance (structures)	1/500	1/500	1/500	1/500	1/500
Grasshopper	Noxious weed control (acres)	50/2500	50/2500	50/2500	50/2500	50/2500
	Cattleguard (structures)	1/6900				
	Fence (miles)	2/12000	2/12000	1/6000	1/6000	
	Water Developments (struc.)	2/1000	2/1000	2/1000	2/1000	2/1000
	Burning	50/625	50/625	50/625	50/625	50/625
	Maintenance (structures)	1/500	1/500	1/500	1/500	1/500
Badger	Noxious weed control (acres	50/2500	50/2500	50/2500	50/2500	50/2500
	Fence (miles)	2/12000	2/12000	1/6000	1/6000	1/6000
	Water Developments (struc.)	2/2000	2/2000	2/2000	2/2000	2/2000
	Misc. Projects (structures)	1/6500	1/4000	1/6500	1/6500	1/500
	Maintenance (structures)	1/500	1/500	1/500	1/500	
Long Prairie	Noxious weed control (acres	50/2500	50/2500	50/2500	50/2500	50/2500
	Fence (miles)	3/18000				
	Water Developments (struc.)	1/1000	1/1000	1/1000	1/1000	1/1000
	Maintenance (structures)	1/500	1/500	1/500	1/500	1/500

Implementation Schedules

Administrative Services

District	Project Name	Fiscal Year	Project Activity	Cost ($M)
Bear Springs	Bear Springs residences	1991	Reconstruction planning	47.7
Zigzag	Timberline Lodge Water	1991	Water & Sanitation Preconstruction	15.0
	McNeil Campground Water system	1991	Water & Sanitation Preconstruction	8.0
	Green Camp on Water System	1991	Water & Sanitation Preconstruction	2.0
Clackamas	Timber Lake Water System	1991	Water & Sanitation Preconstruction	6.0
Columbia Gorge	Wyeth Residence Water System	1991	Water & Sanitation Preconstruction	5.0
Zigzag	Tollgate Shelter	1991	Historic Bldg. Construction	40.0
Bear Springs	Joe Graham Horse Barn	1991	Historic Bldg. Construction	15.0
Clackamas	Fire Lookouts (8)	1991	Historic Bldg. Preconstruction	60.0
	Oak Grove Complex	1991	Historic Bldg. Preconstruction	40.0
Zigzag	Zigzag Office	1992	Preconstruction planning	20.0
Clackamas	Clackamas Housing	1992	Preconstruction planning	9.0
Bear Springs	Bear Springs Residences	1992	Construction	701.0
Zigzag	Snowbunny Water System	1992	Water & Sanitation Preconstruction	2.0
	Timberline Lodge Water System	1992	Water & Sanitation Preconstruction	125.0
	McNeil Campground Water System	1992	Water & Sanitation Preconstruction	78.0
	Green Canyon Water System	1992	Water & Sanitation Preconstruction	15.0
Clackamas	Timber Lake Water System	1992	Water & Sanitation Preconstruction	65.0
Columbia Gorge	Wyeth Residence Water System	1992	Water & Sanitation Preconstruction	50.0
Bear Springs	Clackamas Gas House	1992	Historic Bldg. Construction	15.0
Columbia Gorge	Big John Restroom	1992	Historic Bldg. Construction	10.0
	Eagle Creek Overlook	1992	Historic Bldg. Construction	60.0
	Eagle Creek Cook Shelter	1992	Historic Bldg. Construction	3.0
Clackamas	Hawk Mtn. Cabin	1992	Historic Bldg. Construction	2.0
	Breitenbush Shelter	1992	Historic Bldg. Construction	2.0
	Olallie Guard Station	1992	Historic Bldg. Construction	2.0
	Olallie Meadow Cabin	1992	Historic Bldg. Construction	2.0
Zigzag	Sandy Guard Station	1992	Historic Bldg. Construction	10.0
	Zigzag Administrative Site	1992	Historic Bldg. Construction	40.0
	Zigzag Tech Center	1992	Connect to County Sewer Preconstruction	6.0
Barlow	Barlow Office Addition	1993	Preconstruction planning	10.0
Zigzag	Zigzag Office	1993	Construction	884.0
Clackamas	Clackamas Housing	1993	Construction	880.0
Zigzag	Snowbunny Water System	1993	Water & Sanitation Construction	5.0
	Timberline Sewage Treatment Plant	1993	Equipment Replacement Preconstruction	5.0
	Fire Lookouts (8)	1993-95	Historic Bldg. Construction	300.0
Columbia Gorge	Eagle Creek Cook Shelter	1993	Historic Bldg. Construction	40.0
Clackamas	Hawk Mtn. Cabin	1993	Historic Bldg. Construction	5.0
	Breitenbush Shelter	1993	Historic Bldg. Construction	10.0
	Olallie Guard Stationi	1993	Historic Bldg. Construction	15.0
	Olallie Meadow Cabin	1993	Historic Bldg. Construction	15.0
Zigzag	Sandy Guard Station	1993	Historic Bldg. Construction	70.0
	Zigzag Tech center	1993	Connect to County Sewer	25.0

Implementation Schedules

Administrative Services (continued)

District	Project Name	Fiscal Year	Project Activity	Cost ($M)
Barlow	Barlow Office Addition	1994	Construction	177.0
Zigzag	Timberline Sewage Treatment Plant	1994	Equipment Replacement	90.0
Clackamas	Oakgrove Complex	1994-98	Historical Bldg. Construction	500.0
Columbia Gorge	Eagle Creek Registration Booth	1994	Historical Bldg. Preconstruction	2.0
Bear Springs	Bear Springs Meadow Shelter	1994	Historical Bldg. Preconstruction	10.0
Zigzag	Timberline Sewage Plant	1995	Water & Sanitation Preconstruction	5.0
Zigzag	Timberline Disposal Pit	1995	Replacement Construction	5.0
Columbia Gorge	Eagle Creek Registration Booth	1995	Historical Bldg. Construction	10.0
Bear Springs	Bear Springs Meadow Shelter	1995	Historical Bldg. Construction	40.0
Zigzag	Timberline Sewage Plant	1996	Water & Sanitation Construction	50.0
	Timberline Disposal Pit	1996	Replacement Construction	90.0
Columbia Gorge	Multnomah Falls Water Tank	1996	Paint Preconstruction	3.0
Clackamas	Timber Lake Water Tank	1996	Paint Preconstruction	3.0
Zigzag	Zigzag Administrative Site	1996-98	Historical Bldg. Construction	300.0
Zigzag	Trillium Lake Campground Water Tank	1997	Replacement Preconstruction	5.0
Columbia Gorge	Multnomah Falls Water Tank	1997	Paint Construction	15.0
	Timberlake	1997	Paint Construction	25.0
Zigzag	Zigzag Ranger Station Water Tank	1998	Preconstruction	5.0
Hood River	Lost Lake Water Tank	1998	Replacement Preconstruction	5.0
Estacada	Lazy Bend Water Tank	1998	Reconstruction 5.0	
Zigzag	Trillium Campground Water Tank	1998	Replacement Construction	50.0
Columbia Gorge	Wyeth House Water Tank	1999	Preconstruction	5.0
Zigzag	Zigzag Ranger Station Water Tank	1999	Construction	50.0
Hood River	Lost Lake Water Tank	1999	Replacement Construction	50.0
Estacada	Lazy Bend Water Tank	1999	Construction	20.0
Columbia Gorge	Wyeth House Water Tank	2000	Construction	40.0
	Historical Structure	2000	Historical Bldg. Reports	100.0

Implementation Schedules

Administrative Services (continued)

District	Project Name	Fiscal Year	Project Activity	Cost ($M)
Various	Health & Safety	1992	Electrical Condition Survey	5.0
			Building Conditions survey	5.0
			Sanitary Condition survey	2.0
		1993	Electrical Condition Survey	25.0
			Sanitary Condition survey	22.0
			Building Conditions survey	60.0
		1994	Electrical Condition Survey	25.0
			Sanitary Condition survey	22.0
			Building Conditions survey	5.0
		1995	Electrical Condition Survey	20.0
			Sanitary Condition survey	20.0
			Building Conditions survey	60.0
		1996	Building Conditions survey	5.0
		1997	Building Conditions survey	60.0

Implementation Schedules

Special Interest Areas

Special Interest Area	Fiscal Year	Cost ($1,000's)
Barlow Road and Barlow Tolgate	1991	5
Bagby Hot Springs	1991	30
Cloud Cap-Tilly Jane	1992	35
Old Maids Flat	1992	10
Parkdale Lava Beds	1993	20
Stringer Meadows	1994	25
Clackamas Lake Historic	1994	20
Lost Lake	1995	20
Olallie Lake	1995	50
Little Crater Lake	1996	15
Squaw Meadows	1996	15
Sugar Pine	1997	10
Roaring River	1998	40
Larch Mountain	1999	10
Oneonta Gorge	1999	10
Old Wagon Road	1999	8

Implementation Schedules

Wild & Scenic Rivers

District	Project Name	Fiscal Year	Project Activity	Cost ($M)
Estacada/Clackamas	Clackamas River	1991-92	Designated River	570.0
Estacada	Roaring River		Implementation Plans	(total)
Zigzag/Bear Springs	Salmon			
Zigzag	Sandy			
Zigzag/Bear Springs/ Barlow	White River			
Hood River	Middle Fork Hood River	1993-94	Eligible River Suitability Studies	500.0
Zigzag	Zigzag River			(total)
	Eagle Creek			
Estacada	North Fork Clackamas River			
	South Fork Clackamas River			
	Fish Creek			
	South Fork Roaring River			
Clackamas/Bear Springs	Oak Grove Fork Clackamas River			
Estacada/Clackamas	Collawash River			
Clackamas	North Fork of H. Fish Breitenbush River			

Implementalon Schedules

Viewshed

Viewshed	Fiscal Year	Cost (1000's)
East Fork Hood River (Hwy 35 N. Bennett Pass)	1990	30
Highway 35 (South of Bennett Pass)	1991	7
Highway 26 West	1991	20
Forest Service Road 44	1991	16
Highway 224 (Lower Clackamas River)	1992	23
Lost Lake	1992	7
Timberline Road (Hwy 173)	1993	5
Highway 26 East	1993	16
Forest Service Road 46 (Upper Clackamas River)	1994	40
Timothy Lake	1994	12
Larch Mountain	1995	7
Trillium Lake	1995	5
Forest Service Road 48	1995	9
Hot Springs Fork	1996	14
Oak Grove Fork	1996	12
Highway 216	1997	5
Skyline Road North	1998	5
Clear Lake	1999	5

Implementation Schedules

Research Natural Areas

District	Project Name	Fiscal Year	Project Activity	Cost ($M)
Barlow	Gumjuwac-Tolo	1991	Establishment Report	5.0
	Mill Creek	1991	Management Plan	10.0
	Gumjuwac-Tolo	1992	Management Plan	10.0
Estacada	Bagby	1991	Establishment Report	10.0
Columbia Gorge	Bull Run Existing and Addition	1992	Management Plan	10.0
	Bull Run Addition	1992	Establishment Report	5.0
	Big Bend Mtn.	1993	Establishment Repor	5.0
	Big Bend Mtn.	1993	Management Plan	10.0
	New Proposals	1994		25.0
		1995		20.0

Implementation Schedules

Key Site Riparian Area

District	Project Name	Fiscal Year	Project Activity	Cost	Outputs
Forestwide	Priority KSRs	1991		80,000	16 plans
Forestwide	Priority KSRs	1992		80,000	16 plans
Forestwide	Priority KSRs	1993		80,000	16 plans
Forestwide	Priority KSRs	1994		80,000	16 plans
Forestwide	Priority KSRs	1995		80,000	16 plans
Forestwide	Priority KSRs	1993-2000	Maintenance/enhancement identified in Plans	60,000	2 projects annually

Implementation Schedules

Special Emphasis Watershed Impact Assessments

District	Project Name	Fiscal Year	Project Activity	Cost
Estacada	Upper Collawash River	1991		10,000
Estacada	Fish Creek	1991		10,000
Estacada	Pansey Creek	1991		10,000
Estacada	Blister Creek	1992		10,000
Hood River	Lake Branch	1992		10,000
Estacada	Hot Springs Fork	1992		10,000
Columbia Gorge	Gordon Creek	1993		10,000
Hood River	Clear Branch	1993		10,000
Barlow	Upper Dog River	1993		10,000
Estacada	Eagle Creek	1994		10,000
Estacada	Eagle Creek S. Fork	1994		10,000
Barlow	Eight Mile Creek	1994		10,000
Barlow	Five Mile Creek	1995		10,000
Barlow	Fifteen Mile Creek	1995		10,000
Zigzag	Alder Creek	1995		10,000
Barlow	Mill Creek	1996		10,000
Barlow	Ramsey Creek	1996		10,000
Zigzag	Ramsey Creek	1996		10,000
Forest-Wide	Municipal/Community Watersheds	1996-2000	Implementation Plans for 1 Watershed annually	10,000 annually

Implementation Schedules

Fire Management

Project Name	Fiscal Year	Project Activity	Cost ($M)
Natural Fuels Treatment	1991	800 acres burning	84.0
Natural Fuels Treatment	1992	800 acres burning	84.0
Natural Fuels Treatment	1993	800 acres burning	84.0
Natural Fuels Treatment	1994	800 acres burning	84.0
Natural Fuels Treatment	1995	800 acres burning	84.0
Natural Fuels Treatment	1996	800 acres burning	84.0
Natural Fuels Treatment	1997	800 acres burning	84.0
Natural Fuels Treatment	1998	800 acres burning	84.0
Natural Fuels Treatment	1999	800 acres burning	84.0
Natural Fuels Treatment	2000	800 acres burning	84.0

Implementation Schedules

Land Ownership Adjustment

District	Project Name	Fiscal Year	Project Activity	Cost ($M)	Output Acres
		91	Appraisals, Title, etc.	10.0	140
		92	Appraisals, Title, etc.	10.0	1700
		93	Appraisals, Title, etc.	5.0	500
		94	Appraisals, Title, etc.	5.0	200
		95	Appraisals, Title, etc.	5.0	400
		96	Appraisals, Title, etc.	5.0	400
		97	Appraisals, Title, etc.	5.0	500
		98	Appraisals, Title, etc.	15.0	2300
		99	Appraisals, Title, etc.	5.0	400

Shown above is a schedule of acres to be adjusted by year for the first decade. Outputs in individual years may be significantly different from those shown, depending upon final budgets and proponents ability and desire to provide negotiated levels of cooperation.

Landownership patterns can be changed over time through exchanges of National Forest System land for land of other ownerships, through direct purchase of land (usually with Land and Water Conservation Funds), through donation to the Forest Service, and through transfers with other Federal agencies. This plan establishes guidance for landownership adjustments during the plan period. These adjustments will further the objectives of the Forest Plan and result in a landownership pattern that best accommodates the direction contained in this Forest Plan.

National Forest System lands and certain lands in other ownerships within and surrounding the Forest have been classified and priorities for acquisition or exchange with the intent of eventually achieving the best land ownership pattern for Forest Plan implementation. All lands so classified have been placed in one of the following groups:

Group 1

These are lands where congress has either directly or indirectly instructed the Forest Service to retain ownership and acquire non-Federal lands for a designated National purpose. The objective for Group 1 lands is to retain existing ownership and acquire the remaining lands as indicated by Congressional direction.

Group 2

These lands have been recognized for a special kind of management and are allocated to meet specific purposes. They include Special Interest Areas, Research Natural Areas, and other areas with specific designated management objectives such as recreation management, fish and wildlife protection, visual quality, and water protection. The objective for Group 2 lands is to retain existing ownership and acquire private lands as the opportunity or need occurs.

Group 3

- Consolicated areas of National Forest land that are generally solid blocks. (the objective is to retain these lands to maintain contiguous blocks.)
- Areas of mixed private and Federal ownership. (The objective is to rearrange ownership patterns to benefit resource management goals and to utilize National Forest land to acquire higher priority land.)
- Isolated parcels that can best be managed by the Forest Service or some other public agency.

Group 4

These lands include small isolated tracts of Forest land situated away from contiguous blocks of National Forest land. These lands are usually managed intensively for uses such as agriculture or recreation. (The objective is to make these lands available for disposal in exchanges to acquire lands in Groups 1 and 2.

Group 5

These are lands which need more intensive study and planning before land ownership decisions can be made. (Land acquisition and disposal decisions will be deferred until completion of studies.)

Private lands in Group 1, 2 and 3, respectively, have the highest priorities for acquisition to meet NationalForest management needs. National Forest System lands in Groups 4 and 3, respectively, have the highest priority for disposal in exchange for private lands.

All lands shown in the adjustment schedule are Group 1 and Group 3 land. No Group 2 lands have been identified at this time. Approximately 3000 acres are remaining in Group 4 land that was identified in the Land Adjustment Plan for the Mt. Hood National Forest which was prepared in 1982. This Plan will be updated to identify specific tracts that remain qualified as Group 4 land under current guidelines. Group 5 lands include approximately 9000 acres in the Bull Run Watershed, 3000 acres in the Rhododendron-Old Maid Flats area and 600 acres at Government Camp. Further studies will be completed on these areas before any new exchanges or acquisitions are initiated. These studies will normally be part of the District Project Opportunity Area Analysis process.

Appendix B

Wilderness Action Plans

Appendix B

Wilderness Action Plans

Introduction

The management direction for Wilderness is included in the management area prescriptions for the Wilderness Management Area (see Wilderness Management Area Prescriptions in Chapter Four of the Forest Plan). The action plans in this appendix provide additional information specific to each Wilderness to be used in implementing the management area direction. Specific information in the action plans is subordinate to the overall management direction in the Wilderness Management Area Prescriptions.

Badger Creek Wilderness Action Plan

Facilities and Structures

Management Situation

Two toilets located within the Wilderness on the north shore of Badger Lake are in poor condition and do not conform with the intent of Wilderness.

Management Actions

Remove the toilets as soon as practicable.

Wilderness Carrying Capacity

Management Situation

The newly established Badger Creek Wilderness is the least heavily used Wilderness on the Mt. Hood National Forest. Most recreation use areas appear to be within the Limits of Acceptable Change standards.

The estimated carrying capacity for the Badger Creek Wilderness area is 19,155 Recreation Visitor Days (RVDs) per year. This estimate is based on estimated capacity coefficients of 0.75 RVD/acre/year for the Primitive Trailed WROS zone and 1.0 RVD/acre/year for the Semi-Primitive Trailed WROS zone.

The boundary of the Wilderness as designated includes a portion of Badger Lake which has historically been used at higher levels than would be acceptable for Wilderness. Badger Lake is currently accessed by road.

Information Needs

Collect information on the amount and type of wilderness recreation use that originates from Badger Lake. Consider alternative methods of dispersing use in the vicinity of Badger Lake to protect the wilderness resource.

Management Actions

None at this time.

Trails

Management Situation

There is a need to increase the number of loop trails within the Wilderness, especially for day-use visitors.

Management Actions

Construct a day-use loop trail connecting the Douglas Cabin Trail (#470) and the Gordon Butte Trail (#470A). The loop trail will be located along the Wilderness boundary for approximately 1/2 mile.

Complete construction of the Badger Rim (Davidson) Trail; providing a 7-mile (2-day) loop originating from Badger Crossing Campground and connecting with the Douglas Cabin Trail (#470).

Bull of the Woods Action Plan

Facilities and Structures

Management Situation

There are facilities within the Bull of the Woods Wilderness that are nonconforming with the Wilderness concept.

Management Actions

Remove existing improvements, structures, and facilities not essential to the protection of the Wilderness resource, or are not historically significant.

All other non-conforming structures will be evaluated for historic and cultural significance (as outlined in the Wilderness Prescription) and, if applicable, removed. This includes facilities that are not permitted, no longer usable, serviceable, or unsafe, and facilities that attract overuse of an area. These facilities, so evaluated, will not be maintained, nor will others be allowed to maintain them.

Limits of Acceptable Change

Management Situation

The estimated carrying capacity for the Bull of the Woods Wilderness area is 20,530 Recreation Visitor Days (RVDs) per year. This estimate is based on estimated capacity coefficients of 0.75 RVD/acre/year for the Primitive Trailed WROS zone and 1.0 RVD/acre/year for the Semi-Primitive Trailed WROS zone.

Specific areas in the Wilderness are receiving very heavy use which may be in excess of wilderness carrying capacity as evidenced by increasing resource damage such as soil compaction, trampling of vegetation, loss of ground cover, cutting of green vegetation, increasing unacceptable accumulations of human, dog, and livestock feces, lower water quality, and cutting of snags. These resource effects are especially severe in the fragile ecosystems adjacent to the many small lakes within the area and at higher elevations. It is also evident that opportunities for solitude, challenge, and primitive recreation are declining in specific areas.

These impacted areas are:

- Twin Lakes
- Silver King Lake
- Pansy Lake
- Big Slide Lake
- Lake Lenore
- Bull of the Woods Lookout
- Welcome Lakes

Management Actions

The following corrective actions are designed to reduce the impact of overuse and restore the wilderness character of specific areas within the Wilderness. Some of these actions may be currently in effect, others are planned for the future. All actions will be implemented during the first decade after the approval of the Forest Plan.

It is expected that as pre-trip safety, "no trace'" and wilderness ethic education efforts increase, the need for specific on-site resource protection messages to deal with currently identified problems will decrease. When, and if, monitoring practices indicate the desired objectives have been achieved or are no longer desirable; many of these objectives will be re-assessed.

Wilderness-wide Actions

- Determine and manage for a level of visitor use that will preserve and restore the Wilderness resource and opportunities for Wilderness recreation.
- Unless otherwise permitted, prohibit camping within 100 horizontal feet of the high water mark of lakes.
- Unless otherwise permitted, prohibit building, maintaining, attending, or using a fire, campfire, or stove within 100 horizontal feet of the high water mark of lakes.
- Unless otherwise prohibited, permit overnight stays by visitors under special-use permit (outfitter-guide operations).
- Prohibit or discourage tent sites and fires in open, or meadow areas (i.e. campsites should be under cover of trees).
- Prohibit Grazing of recreational stock at all lakes in the Wilderness.
- Prohibit stock from being tethered within 100 horizontal feet of lakes, or any designated campsite.
- Require dogs and other domestic pets to be on leases at all times, or prohibit in Wilderness if situation with conflicts from dogs and dog feces becomes worse.

Site-Specific Actions

Twin Lakes

- Restrict overnight stays by outfitter-guides, and others under permit, to sites designated in the permit.
- Replace existing "Wallowa" toilet with similar type (or composting type) and maintain in place.

Silver King Lake

- Install "Wallowa" or composting type toilet and maintain in place.

Pansy Lake

- Maintain existing "Wallowa" toilet in place.

Big Slide Lake

- Prohibit overnight stays by outfitter-guides, and others under permit.
- Install "Wallowa" or composting type toilet and maintain in place.

Lake Lenore

- Restrict camping to designated sites.
- Restrict overnight stays by outfitter-guides, and others under permit, to sites designated in permit.
- Maintain existing toilet, and replace with "Wallowa" or composting type when present one deteriorates.

Bull of the Woods Lookout

- Restrict area to day-use only.
- Maintain existing toilet, and replace with "Wallowa" or composting type when present one deteriorates.

Welcome Lakes

- Restrict all camping to designated sites.
- Prohibit overnight stays by outfitter-guides, and others under permit.

Battle Creek Shelter

- Restrict camping to designated sites.
- Prohibit overnight stays by outfitter-guides, and others under permit.
- Install "Wallowa" or composting type toilet and maintain.

Trails

Management Situation

Resource damage is occurring from utilization of some improperly designed and located trails and trailheads.

Management Actions

Provide and maintain a trail system, and appropriate signing, to a standard that will meet management needs for protecting resources and distributing visitor use, eliminate duplication of routes, and minimize maintenance costs.

Relocate and/or reconstruct the following trails or portions thereof to meet the above objective:

- Mother Lode Trail #558
- Dickey Creek Trail #553
- Geronimo Trail #557
- Whetstone Trail #546

Relocate and/or reconstruct the following trailheads to provide adequate parking, signing and access:

- Bull of the Woods (#551)
- Dickey Creek (#553)
- Elk Lake Creek (#559)

Fisheries/ Riparian

Management Situation

Eleven lakes and 15 to 20 miles of streams provide habitat for resident trout. Major lakes include Twin, Welcome, Slide, and Pansy. All of the lakes are likely to have been stocked with trout within the last 50 years. Today, six of the lakes are stocked annually. The primary species is Eastern Brook Trout. Five of the lakes rely on natural reproduction of brook trout.

Major streams include Elk Lake Creek, Battle Creek, Dickey Creek, and the Hot Springs of the Collowash River. Anadromous access to portions of these streams, within the Wilderness, are blocked by natural obstructions. However, these streams support "wild" populations of rainbow and cutthroat trout. Additionally, they provide high quality water to downstream areas which provide anadromous habitat (lower Elk Lake Creek, Collowash River, lower Dickey Creek, and the Hot Springs Fork of the Collowash River.

A variety of riparian areas are found adjacent to the streams and lakes. Exceptionally diverse, high-quality riparian habitat areas, associated with Welcome Lakes, Twin Lakes, and a portion of the Dickey Creek floodplain, are identified for special management emphasis as Key Site Riparian Areas. A number of small wetlands, seeps, and springs are likely present. No inventories are available, however, to locate or describe most of these areas.

Relatively high levels of recreation use occurring within the riparian areas of the lakes has reportedly caused local reductions in habitat quality (loss of vegetation, soil compaction, etc.). No recent assessments of riparian condition at the lakes are available to further describe this situation.

Information Needs

Complete riparian area and aquatic habitat assessments for all lakes and perennial streams.

Identify and characterize all wetland and seep/spring areas greater than 1/2 acre.

Develop better estimates of legal trout habitat capability in streams and lakes. Compare with current use, harvest, and stocking to determine if additional Forest Service or Oregon Department of Fish and Wildlife management actions are needed.

Identify and prioritize sites/areas where reductions in riparian/aquatic habitat condition merit rehabilitation or special management consideration.

Management Actions

Current riparian and aquatic habitat assessments will be conducted to guide informed management.

Continue on-going fisheries management activities at lakes. Continue to monitor these activities to ensure maximum compatibility with overall management objectives.

Consider designation of upper Dickey Creek and Elk Lake/Battle Creek as wild trout management areas. Develop appropriate management objectives consistent with wilderness management goals.

Develop appropriate Information and Education measures to enhance understanding and enjoyment of riparian areas and aquatic habitats.

Columbia Wilderness Action Plan

Facilities and Structures

Management Situation

There are facilities within the Columbia Wilderness that are nonconforming with the Wilderness concept. The types of facilities are listed below:

- Trail shelters
- A diversion dam at Rainy Lake
- Steel fire rings at camping areas

Management Actions

Remove existing improvements, structures, and facilities not essential to the protection of the Wilderness resource, or of historical significance.

All other non-conforming structures will be evaluated for historic and Cultural significance (as outlined in the Wilderness prescription) and, if applicable, removed. This includes facilities that are not permitted, no longer useable, serviceable, or unsafe, and facilities that attract over use of an area. These facilities, so evaluated, will not be maintained, nor will others be allowed to maintain them.

Allow the diversion dam on Rainy Lake to deteriorate; causing the lake to return to its natural level, and restore the area to a natural condition.

Wilderness Carrying Capacity

Management Situation

The estimated carrying capacity for the Columbia Wilderness is 29,827 Recreation Visitor Days (RVDs) per year. This estimate is based on estimated capacity coefficients of 0.75 RVD/acre/year for the Primitive Trailed WRS Zone, and 1.0 RVD/acre/year for the Semi-Primitive Trailed WRS Zone.

Specific areas in the Wilderness are receiving use in excess of capacity as evidenced by:

- Increasing resource damage such as soil compaction, trampling of vegetation, loss of ground cover, cutting green vegetation, declining water quality, and snag removal.
- Opportunities for solitude, challenge, and primitive recreation are declining during holidays and weekends.
- Increasing accumulations of human and dog feces.

Impacted areas include:

- Eagle Creek Trail (#440) from the Wilderness boundary to the junction with the Eagle-Tanner Trail (#433).
- Wahtum Lake - to a distance of 200 feet from the lake shore.

Management Actions

The following corrective actions are designed to reduce the impact of overuse and restore the wilderness character of specific areas within the Wilderness. Some of these actions may be currently in effect or planned. All should be implemented during the first decade after the approval of the Forest Plan. It is expected that as pre-trip safety, "no trace'" and wilderness ethic education efforts increase, the need for specific on-site resource protection messages to deal with currently identified problems will decrease. When, and if, monitoring practices indicate restoration to the desired objectives, many of these objectives will be re-assessed and phased out.

Implement the following corrective actions by 1988:

Eagle Creek Trail (#440) from the Wilderness boundary to the junction of Eagle-Tanner Trail (#433).

- Prohibit building, maintaining, attending, or using a fire, campfire, or stove fire, except for a pressurized liquid or gas stove from June 1-September 15.
- Prohibit overnight camping by visitors under Special Use Permit.
- Prohibit dogs from the trail and surrounding area. Seeing-eye dogs and other pets utilized by handicapped and dogs used in rescue are exempted.
- Revegetate impacted areas.

Wahtum Lake

- Prohibit campfires within 200 feet of the lake.
- Restrict camping to designated sites, and maintain only designated fire rings.
- Rehabilitate the Developed Recreation site at the head, and the trailhead; including revegetation of the impacted area, and appropriate signing.
- Close and rehabilitate portions of road #2030-660; as per the Forest Plan (Refer to Management Area Prescriptions and Chapter II of FEIS). Sign and post the closed portions of the road; as per regulations and Management Area Prescriptions (see also transportation actions pg. 4)

Pacific Crest Trail

Fire and Fuels Management

Management Situation

The unnatural exclusion of fire from the Benson Plateau has allowed the encroachment of woodlands into the meadow and the accumulation of forest fuels.

Information Needs

Evaluate the need for prescribed fire at Benson Plateau to achieve wildlife, fuels management, and wilderness objectives.

Management Actions

Take appropriate actions to prevent the loss of meadow habitat and to minimize the potential of a catastrophic fire.

Transportation

Management Situation

Illegal use of motorized transportation inside the Wilderness has increased at Wahtum Lake, Pacific Crest Trail, Indian Springs camp, and the Herman Creek Trail.

Management Actions

Install gates at the junction of Forest Road 1310 and Wahtum Lake, and at the junction of Forest Road #2330-660 and Indian Springs and restrict these areas to administrative use only. This will allow continued access to non-wilderness portions of the Forest for other management activities and reduce the need for law enforcement actions inside the Wilderness.

Post the Wilderness boundaries appropriately; indicating the closure to motorized vehicles, and enforce the closures.

Wildlife

Management Situation

Diverse habitat conditions support a variety of wildlife species. Early seral conditions remnant of historic wildfires are generally decreasing but still persist in some locations. Benson Plateau is one example of such a location. Young, dense conifer stands providing quality habitat for a relatively low diversity of wildlife species persist in many areas. Tracts of mature and "old growth" conifer forests which survived historic fire activity contribute substantially to the structural and functional wildlife habitat diversity.

Wildlife associated with early seral communities such as deer, elk, black bear, songbirds, birds of prey, and woodpeckers are valuable components of both consumptive and nonconsumptive wildlife recreational uses. The prevalence of these species has declined in recent decades due to exclusion of natural wildfire. The decline in abundance of these animals has not only reduced the quality of the wildlife resource in the Wilderness but also the wildlife viewing aspect of the Wilderness user's experience.

Information Needs

Inventory and assess key wildlife habitat components.

- Identify and describe old growth habitat.
- Identify and describe dry meadow and early seral communities.

Inventory wildlife use of key habitat components for species such as the northern spotted owl and Roosevelt elk.

Monitor consumptive and nonconsumptive recreational uses to insure compatibility with wildlife and wildlife habitat needs in Wilderness.

Management Actions

Assess the appropriateness of re-introducing fire into wilderness vegetation management.

Develop appropriate wildlife management objectives consistent with wilderness management goals.

Develop environmental education tools to enhance visitor understanding and appreciation for wilderness wildlife and wildlife habitat.

Riparian

Management Situation

The Columbia Wilderness contains important wetland and riparian habitats along with associated wildlife. Use of the Wilderness by some of these species may play an important role in the long term maintenance and viability of some species such as harlequin duck, Barrow's goldeneye, bufflehead, hooded merganser, and western spotted frog.

Information Needs

Inventory wetland and riparian habitats and monitor use by selected wildlife species, e.g. waterfowl and western spotted frog.

Management Actions

Develop wildlife management objectives and measures which assure continued habitat adequacy for these species.

T & E Species

Management Situation

Wildlife habitat conditions provided by the Columbia Wilderness play important roles in management of several Threatened and Endangered, and sensitive species. Bald eagles wintering in the Columbia Gorge may be using portions of the wilderness for winter roost sites. The Wilderness is expected to contribute in the recovery of the threatened bald eagle by providing future foraging and possibly nesting habitat.

Peregrine falcons have been observed foraging in some of the higher elevation areas of the wilderness such as Tanner Butte. An active, multi-year program to re-establish the endangered peregrine falcon as a nesting species in the Columbia Gorge-Bull Run vicinity began in 1986.

Larch Mountain salamanders, once thought to be endemic to a very localized area of the Columbia River Gorge, are believed to inhabit portions of the Columbia Wilderness. Recent discoveries have extended the known range of the species short distances to the north and south of the Gorge.

Spotted owls are known to inhabit portions of the Wilderness. The East Fork of Herman Creek will be managed as a spotted owl habitat area (SOHA). Portions of Tanner Creek and Eagle Creek will also be included in SOHA's. Some members of the biological community consider the Columbia River Gorge to be a barrier to genetic interchange which jeopardizes the longevity of the spotted owl by creating separate populations on the north and south sides of the Columbia River. Maintenance of the high quality habitat in the Columbia Wilderness may improve the vigor of the resident populations and may encourage the likelihood of dispersion across the Columbia River and reduce the possibility of a true genetic barrier.

Information Needs

Conduct field reconnaissance of old growth, mature, and other selected forest areas for spotted owl occurrence. Locate and characterize primary activity areas such as roost and nesting sites. Monitor reproductive success and juvenile dispersal.

Identify and characterize reproductive habitat for peregrine falcon.

Conduct field reconnaissance of selected habitat for Larch Mountain salamander. Delineate and characterize habitat in sites occupied by the salamander. Determine the extent of the species range within the Wilderness.

Sample the amphibian population to determine occurrence of western spotted frog. Characterize habitat conditions at sites where this species is located.

Monitor Wilderness areas for use by wolverine.

Management Actions

Integrate bald eagle forage production objectives into fisheries and recreation management activities at key potential foraging sites such as Wahtum and Rainy Lakes.

Integrate peregrine falcon foraging objectives with fire management activities.

Integrate protection of key habitat components for Threatened and Endangered and sensitive species with management of recreational use patterns.

Mt. Hood Wilderness Action Plan

Facilities and Structures

Management Situation

There are facilities within the Mt. Hood Wilderness which may be nonconforming with the intent of Wilderness. The types of facilities are listed below:

- Trail shelters
- Plaques giving tribute to specific individuals
- Metal culverts and trail structures constructed of milled lumber
- Remains of at least one airplane wreck
- Remnants from past shelters and Civilian Conservation Corps camps
- Helispots

Management Actions

When replacement is required, non-conforming trail structures will be replaced with those using natural materials.

Non-conforming and unapproved helispots will have markers removed, all debris removed, the area restored and allowed to grow back.

All other potential nonconforming structures will be evaluated for historic and cultural significance (as outlined in the Wilderness prescription) and, if applicable, removed. This includes facilities that are not permitted, no longer serviceable, or unsafe, and facilities that attract overuse of an area. these facilities, so evaluated, will not be maintained, nor will others be allowed to maintain them.

Wilderness Carrying Capacity

Management Situation

Before wilderness designation, much of the Mt. Hood Wilderness was popularized in guidebooks and received heavy use at what have become the major destination sites. A few areas that have been receiving heavy use have shown a decrease in resource impacts due to intensive wilderness management practices. Most other areas, however, are showing unacceptable resource damage, indicated by soil compaction, loss of ground cover, lack of naturally occurring firewood and trampled vegetation, and unacceptable accumulations of human and dog feces.

During the last decade, the Forest Service's ability to fund wilderness management activities having impact at the ground level has decreased. Implementation of active management techniques to achieve the objectives of the wilderness portion of the Forest Plan takes a significant level of funding. It is recognized that until the funding level matches the intended level of wilderness management, these management practices will have to be phased out. Opportunities for solitude, challenge, and primitive recreation do not meet wilderness standards in some cases.

The estimated carrying capacity for the Mt. Hood Wilderness is 36,118 Recreation Visitor Days (RVDs) per year. This estimate is based on the capacity coefficients of 0.75 RVD/acre/year for the Primitive Trailed WRS zone and 1.0 RVD/acre/year for the Semi-Primitive Trailed WRS zone.

Comparison of visitor numbers and use practices with the estimated wilderness carrying capacity and the proposed limits of acceptable change indicates that the current level of use exceeds capacity during portions of the recreation season in the following areas:

- Burnt Lake
- Cast Lake
- Cairn Basin
- Eden Park
- Elk Cove
- Mt. Hood Summit
- Paradise Park
- Elk Meadows
- Southside Climbing Route
- Ramona Falls
- Cooper Spur

Management Actions

The following corrective actions are designed to reduce the impact of overuse and restore the wilderness character of specific areas within the Mt. Hood Wilderness. Some of these actions may be currently in effect or planned. All should be implemented during the first decade after the approval of the Forest Plan. It is expected that as pre-trip safety, "no trace'" and wilderness ethic education efforts increase, the need for specific on-site resource protection messages to deal with currently identified problems will decrease. When, and if, monitoring practices indicate restoration to the desired objectives, many of these objectives will be re-assessed and phased out.

Wilderness-Wide Actions

Implement the following regulations:

Prohibit building, maintaining, attending, or using a campfire within any meadow (a meadow is defined as an area covered with grass or other non-woody vegetation)

Prohibit camping:

- Within any meadow.
- Within 100 feet of the shoreline of any lake or stream.

Require dogs and other domestic pets to be on leases at all times, or prohibit in Wilderness if situation with conflicts from dogs and impacts from dog feces becomes worse. Seeing eye dogs and other pets utilized by handicapped and dogs used in rescue work are allowed.

Schedule Wilderness Ranger Patrols for high use areas during the heavy use season; for the purpose of contacting and educating visitors about fire prevention, resource protection, Wilderness monitoring, and maintenance activities.

Implement, and monitor results of revegetation plans at sites with identified areas of unacceptable resource damage.

Expand data obtained from monitoring code-a-site and photo points; to assist in evaluating the proposed standards defining the Limits of Acceptable Change (LAC).

Maintain only designated fire rings; to minimize resource damage in problem areas.

Utilize the "Litter Incentive Program" (encouraging visitors to pick up litter for incentive awards) in areas with known litter problems. Emphasize contacting visitors before they enter the Wilderness.

Emphasize providing information to Wilderness users on the proper use of Wilderness, user safety, fire prevention, and resource protection at all entry points. Special emphasis will be made to provide information at Riley Horse Camp, the climbing register at Timberline Lodge, and the Zigzag Ranger Station.

Site-Specific Actions

Burnt Lake

Maintain only designated fire rings and campsites along the shoreline area.

Maintain a specific resource protection message at a central peak board as long as it proves effective and provide brochures that address site-specific impact problems. Also make information available at the two key entry points.

Ramona Falls

Prohibit camping or building, maintaining, attending or using a campfire within 500 feet of Ramona Falls.

Maintain the peakboard in the falls area; with a site-specific resource protection message.

Retain, and maintain, the fence at the base of the falls. The resource protection message will be retained.

Retain, and maintain, the horse hitchrack.

The upper trailhead and access road will not be expanded or improved; evaluate the option of reconstructing and using the lower trailhead combined with closing the upper trailhead and access road.

Develop a site-specific brochure dealing with specific resource problems and make available at the entry point information station.

Prohibit dogs from the trail and surrounding area by 1990. Seeing eye dogs and other pets utilized by handicapped and dogs used in rescue work are exempted.

Paradise Park

Remove the existing horse hitchrack at the junction of the Pacific Crest National Scenic Trail and the Paradise Park Trail.

Maintain only resource protection messages known to have an impact in reducing specific identified problems; remove all others.

Elk Cove and Elk Meadows

Prohibit camping or building, maintaining, attending, or using a campfire within the tree covered islands of Elk Cove and Elk Meadows.

Provide a site specific brochure addressing the major resource impacts at the key entry point information stations.

McNeil Point

Prohibit building, maintaining, attending, or using a campfire within 500 feet of McNeil Point.

Information Needs

There is a need to determine the actual carrying capacity for the Mt. Hood Wilderness for planning and management purposes.

Trails

Management Situation

Some of the trails within the Mt. Hood Wilderness are currently receiving a level of use which is causing some form of resource damage and will require relocation or reconstruction. Other trails have identified safety problems for visitors, have been constructed or maintained at a level higher that desired for a wilderness setting, or lead directly to areas receiving heavy and/or excessive use.

Management Actions

Prohibit possessing or using saddle, pack, or draft animals on the following trails:

- Timberline Trail #600
- Cathedral Ridge Trail #625
- Yocum Ridge Trail #771
- Paradise Park Loop Trail #757
- Elk Cove Trail #631
- Pinnacle Ridge Trail #630
- Vista Ridge Trail #626
- Gnarl Ridge Trail #652
- Newton Creek Trail #646
- Castle Canyon Trail #765

Maintain the trail bridges on the Timberline Trail at Coe and Elliot Creeks for user safety; at least until the level of funding allows for a pre-entry education effort that stresses the wilderness challenge.

Develop a trail management plan for the Mt. Hood Wilderness which addresses solutions for the current situation and specifically the following trails:

- Burnt Lake Trail #772
- Top Spur Trail #
- Pacific Crest National Scenic Trail
- Cathedral Ridge Trail #625

Specific objectives to be addressed in the trail management plan include, but area not limited to:

- Evaluation of the alternative of permanently re-designating the Bald Mountain Trail #785 as the equestrian route from Ramona Falls to Bald Mountain.
- Evaluation of maintenance standards for the section of the PCNST from Ramona Fall to Bald Mountain.

Commercial Use

Management Situation

Commercial use of Wilderness requires the issuance of a special use permit. At present, a number of commercial operations are permitted within the Wilderness. These include outfitter guides leading climbing and backpacking parties, filming, and wilderness schools.

There is also a significant amount of commercial or "pseudo-commercial" use of the Wilderness occurring where a special use permit has not been issued. These illegal activities include outfitter guides leading climbing parties in excess of current party size limitations, as well as other "events."

Management Actions

Permit only those commercial operations which:

- Least affect the wilderness environment.
- Are most dependent upon the wilderness environment and cannot be reasonably accommodated elsewhere.

Information Needs

There is a need to assess the current level of activity and establish both the carrying capacity of commercial activities within the wilderness and the priority to manage it.

Non-Commercial Use

Management Situation

Currently the only non-commercial use allowed within the Wilderness is the operation of seismic monitors at various locations on Mt. Hood by the U.S. Geological Survey for monitoring potential volcanic activity.

Management Actions

Place the following restrictions on the installation and maintenance of these seismic monitors:

Restrict access for normal annual maintenance to access by foot. Allow the use of helicopters only on a case by case basis, which requires Regional Forester approval.

Screen all facilities from public view as much as is practicable.

Salmon Huckleberry Wilderness Action Plan

Facilities and Structures

Management Situation

There are facilities within the Salmon Huckleberry Wilderness that are nonconforming with the Wilderness concept. The types of facilities are listed below:

- One trail shelter
- The remains of various structures including cabins, mines, fencing, telephone lines, and lookout foundations.
- One airplane wreck.
- Facilities of a ride-in horsecamp, including bulletin boards, hitch racks, and fabricated camping stoves.

Management Actions

Remove existing improvements, structures, and facilities not essential to the protection of the Wilderness resource, or of historical significance.

All other non-conforming structures will be evaluated for historic and cultural significance (as outlined in the Wilderness Prescription) and, if applicable, removed. this includes facilities that are not permitted, no longer useable, serviceable, or unsafe, and facilities that attract over-use of an area. These facilities, so evaluated, will not be maintained, nor will others be allowed to maintain them.

Wilderness Carrying Capacity

Management Situation

The estimated carrying capacity of the Salmon Huckleberry Wilderness is 33,352 Recreation Visitor Days (RVDs) per year. This estimate is based on estimated capacity coefficients of 0.75 RVD/acre/year for the Primitive Trailed WRS zone and 1.0 RVD/acre/year for the Semi-primitive Trailed WRS.

With the exception of Plaza Lake and the section of Salmon River Trail below the bluffs but within the Wilderness boundary, very little use occurs within the Salmon Huckleberry Wilderness. This lack of use appears to be due to the very rugged terrain and lack of water sources along the existing trail system, which is located primarily along the river bottom or along the ridgetops with major elevation differences between.

Some unacceptable resource damage as indicated by soil compaction, loss of ground cover, and trampled vegetation is occurring in sites along the lower portion of the Salmon River Trail and at Plaza Lake.

Management Actions

The following corrective actions are designed to reduce the impact of overuse and restore the wilderness character of specific areas within the Wilderness. Some of these actions may be currently in effect or planned. All should be implemented during the first decade after the approval of the Forest Plan. It is expected that as pre-trip safety, "no trace'" and wilderness ethic education efforts increase; the need for specific on-site resource protection messages to deal with currently identified problems will decrease. When, and if, monitoring practices indicate the desired objectives have been achieved or are no longer desirable; many of these objectives will be re-assessed.

Wilderness Wide Actions

Schedule Wilderness Ranger patrols for high use areas during the heavy use season; for the purpose of contacting and educating visitors about resource protection, wilderness monitoring, and maintenance activities.

Implement, and monitor results of revegetation plans at sites with resource damage.

Maintain only designated fire rings; to minimize resource damage in problem areas.

Information Needs

There is a need to determine the actual carrying capacity for the Salmon Huckleberry Wilderness for planning and management purposes. A consistent inventory process needs to be implemented throughout the wilderness to establish descriptive baseline information.

Trails

Management Situation

Many miles of trails and several preliminary survey lines for roads have been abandoned. Other trails have received excessive resource damage due to poor location or past use of motorized vehicles. The Salmon River Trail currently receives level III maintenance and is designated as a National Recreation Trail under the National Recreation Trails System.

Management Actions

Prohibit possessing or using saddle, pack, or draft animals on the following trails:

- Kinzel Lake Trail #665
- Fir Tree Trail #674
- Salmon River Trail #742
- Boulder Ridge Trail #783A
- Plaza Trail #783 (Portion from Forest Boundary to Trail #781)
- Salmon Mountain Trail #787
- Green Canyon Way Trail #793A
- Bonanza Trail #786
- Cool Creek Trail #794
- Hunchback Trail #793

Develop a Trail Management (Development) Plan for the Salmon Huckleberry Wilderness. The plan will address the current situation and identify solutions which will allow for providing and maintaining a trail system that meets legal direction, management needs for protecting resources and distributing visitor use, and minimizes maintenance costs. This will include evaluating the potential of reconstructing previously abandoned routes.

Remove the Salmon River Trail from designation as a National Recreation Trail and maintain the trail at level I within the Wilderness.

Require dogs and other domestic pets on the lower Salmon River Trail to be on leases at all times.

Commercial Use

Management Situation

Currently, there is very little, if any, commercial use in the Salmon- Huckleberry Wilderness.

Management Actions

Permit only those commercial operations which:

- Least affect the wilderness environment.
- Are most dependent upon the wilderness environment and cannot be reasonably accommodated elsewhere.

If commercial use increase to a point where there are user conflicts, additional restrictions may be required in the future.

Non-commercial Use

Management Situation

Currently, there are no non-commercial uses.

Management Actions

All future non-commercial uses will be evaluated to insure they meet wilderness management direction prior to approval.

Appendix C

Access and Travel Management Guide

Appendix C

Access and Travel Management Guide

Objectives

The objectives of this policy and guide are to:

- Provide broad direction for travel management of vehicles used for recreation specific to each management area and identified by vehicle type.
- Summarize national direction dealing with recreation travel
- Provide general Forest guidelines for preparation and implementation of travel management plans for the purpose of assigning specific access management goals and objectives to individual routes, trails and land areas.

National Direction

In 1977 Executive Order 11644 was amended by Executive Order 11989. This Order has the purpose of *"...establishing policies and provide for procedures that will ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of these lands, to promote the safety of all users of these lands, and to minimize conflicts among the various uses of those lands."* This Executive Order requires that each National Forest look for opportunities for off-road vehicles that are compatible with the resources, provide safety for all users and minimize conflicts between different user groups. It has left the decision on how much land to allow off-road vehicle use to the public land agencies.

If the use of one or more vehicle types off roads is expected to cause considerable adverse effects on the resources or other Forest visitors, use of the affected areas and trails by the vehicle type or types will be restricted or prohibited until such time as the adverse effects can be eliminated (36 CFR 295.2).

Information and maps will be published and made available to the public, describing (36 CFR 295.4):

- The regulation of vehicle use.
- Time periods when use is allowed, restricted or prohibited.
- The type of vehicle regulated.

Traffic on Forest Development Roads is subject to State traffic laws where applicable except when in conflict with rules established under Federal Orders (36 CFR 261).

Provide a diversity of off-road vehicle recreational opportunities (FSM 2355) when:

- The use is compatible with established land and resource objectives.
- The use is consistent with the capability and suitability of the resources.
- The type of off-road vehicle opportunity is an appropriate National Forest Recreation activity.
- There is demonstrated demand which cannot be satisfied elsewhere.

Use the monitoring activities established in the Forest plan and the management review procedures to monitor and evaluate off-road vehicle use, it's effects, and enforcement of restrictions and closures (FSM 2355).

State Direction

The Oregon State Motor Vehicles Division has strict rules for operating non-highway legal motor vehicles on roads, and the mixing of highway legal and non-highway legal motor vehicles ("Snowmobiles and All-Terrain Vehicles In Oregon," Oregon Department of Motor Vehicles).

The State of Oregon has established rules for three classes of All Terrain Vehicles (ATVs) and snowmobiles.

Class 1 ATVs (3 wheelers and 4 wheelers) are defined as a motorized off-highway recreational vehicle that is 50 inches or less in width having a dry weight of less than 600 pounds which travels on three or more low-pressure tires and having a saddle.

Class 2 ATVs (dune buggies, jeeps and other 4x4's) are defined as a vehicle weighing more than 600 pounds and less than 8,000 pounds, able to travel cross-country on or over land, water, sand, snow, ice, marsh, swampland or other natural terrain, and actually being operated off a highway. Many Class 2 ATVs are registered as a passenger car or street legal vehicle. A snowmobile is defined as a self propelled vehicle capable of traveling over ice or snow, using an endless belt or cleats, or a combination of tread and cleats, as its means of propulsion, steered wholly or in part by skies or sled-type runners, not registered as any other type of vehicle.

Class 3 ATVs (off-road motor cycles) are defined as a motorized off-highway vehicle having a dry weight of less than 600 pounds which travels on two tires.

It is illegal to operate snowmobiles and Class 1, 2 or 3 ATVs that are not licensed as motorcycles or passenger cars on roads and highways open to street legal motorized vehicles. This eliminates use of Class 1 and many Class 2 ATVs or Class 3 on all maintenance level 2, 3, 4 and 5 roads unless a Federal Order is issued to eliminate all traffic except Class 1 and 2 ATVs.

The following is a description of Maintenance Levels as they pertain to motorized vehicle access on Forest roads.

Maintenance Level 1 (ML1)

Roads are not maintained for motor vehicle use and are closed to vehicle traffic. They may be used for foot or horse travel [FSH 7709 12.3(2a].

Maintenance Level 2 (ML2)

Roads are maintained for high-clearance vehicle use and are not maintained for public passenger car travel. These roads may be used by Forest visitors unless specifically prohibited. Passenger car use is discouraged [FSH 7709 12.3(2b)].

Maintenance Level 3-5 (ML 3-5)

Roads in this and higher maintenance levels are subject to the applicable standards of the Highway Safety Act. They are maintained to be passable for public passenger cars operated at prudent driving speeds [FSH 7709 12.3 (2c,d,e)].

Forestwide Standards

Forest Recreational Access

- Opportunities for recreational access may be limited and shall be consistent with management direction.
    - Areas and trails may be designated as available for motorized and/or non-motorized access.
    - Areas may be designated as available or unavailable to oversnow vehicle use.
    - Seasonal closures or travel restrictions may be applied to protect or enhance resource values (i.e. both recreation and non-recreation associated resource values).
- Provisions of Oregon State Laws relating to the operation of motor vehicles shall be applicable to all open Forest Service roads, i.e. Forest Service road maintenance levels 2 through 5. Applicable Oregon State Laws are enforceable by Forest Service, State and County law officers.
- Roads, areas and trails closed or restricted to Forest access shall be posted.

Use of Table

The table included in this appendix is intended to provide guidelines for the recreation use of vehicles on the Mt. Hood National Forest. It represents a summary of the guidelines found in Chapter 4, Management Prescriptions, and Standards and Guidelines. The tabular information does not supercede or replace Chapter 4 direction. If discrepancies exist between this document and direction found in Chapter 4, the Management Prescriptions hold precedence.

This Access Travel Management Guide is not intended to address travelway management of all vehicles but only those that are expected to be most prevalent in the future.

The table assumes that all Class 1 ATV are not highway legal and therefore cannot operate on Maintenance Level 2 through 5 roads, except where so indicated.

Class 2 ATVs that are also registered as a highway legal vehicle, are included in the "4 x 4" in the table. Non-street legal Class 2 ATVs are not included in the table, as there has not been a demonstrated demand for use of these vehicles on the Mt. Hood National Forest. However, site specific plans may include these vehicles based on travel management direction in the LRMP.

Definitions and Methods for Accomplishment

The terms below often have different meanings depending upon the resource referred to. Therefore, the intent and meaning of the terms used in the appendix are described below and are to be used during the preparation and implementation of travel management plans. The methods planned to accomplish the intent of the definition is also shown.

Term	Definition	Methods of Accomplishment
Encourage	To invite use or perform changes to the trail and road system, thereby inviting traffic. Influence specific vehicle type to use the road, trail or area. These are the best locations to use specific vehicle types (defined as Open).	Signing, maps, maintenance, changes in road and trail design elements and special management designations, special interest group participation, and advisory information.
Accept	To allow use. Not invite. The road, trail or area is generally adequate for the intended vehicle type (defined as Open).	Signing, maps.
Discourage	Measures taken to discourage use. Persuade some vehicle types not to use the road, trail or area. These are the least compatible, yet still open, locations for this type of use (defined Open).	Signing, physical barriers, maps, advisory information, and maintenance practices.
Eliminate	Eliminate traffic. No use by specific vehicle type (defined as Closed).	Physical/vegetative barriers, prohibitions (law enforcement), map, trail or road and obliteration of portion of trail or road, signs.

Some other definitions used in this table are included below:

Seasonal Restrictions (SR)

The initials "SR" identify that the specific designation applies except in some site specific circumstances. These circumstances could include a particular resource activity or physical condition causing a hazardous or life threatening condition, or considerable adverse effects on Forest resources might occur.

Access and Travel Management Guide

Facility Type	Non-Lic Class 2 >50" Width	Summer Use Class 1 ATV[13] (ATVs & Quads)	Licensed Motor-ized Trailbike	Class 3 Non-Lic Motor-ized Trailbike	Non-Motor-ized Moun-tain Bike	High Clear Vehicles (Licen-sed 4x4's)	Pas-senger Vehicles	Winter Use	Motor-ized Water Craft
Management Area: A-2 Wilderness									
Roads:									
ML1	EL**	EL**	EL**	EL**	EL**	EL**	EL**	EL**	
ML2	EL**	EL**	EL**	EL**	EL**	EL**	EL**	EL**	
ML 3-5	EL**	EL**	EL**	EL**	EL**	EL**	EL**	EL**	
Trails:	EL**	EL**	EL**	EL**	EL**	EL**	EL**	EL**	
Area:	EL**	EL**	EL**	EL**	EL**	EL**	EL**	EL**	
Management Area: A-3 Research Natural Areas									
Roads:									
ML1	EL	EL	EL	EL	EL	EL	EL**	EL	
ML2	A	EL	A	EL	EL	A	EL**	EL[12]	
ML 3-5	A	EL	A	EL	EL	A	A	EL[12]	
Trails:	EL	EL	EL	EL	EL	EL	EL**	EL	
Area:	EL	EL	EL	EL	EL	EL	EL**	EL	
Management Area: A-4 Special Interest Area									
Roads:									
ML1	EL	EL	EL	EL	A	EL	EL*	EL	
ML2	EL[2]	EL	A	EL	A	A	EL**	EL[12]	
ML 3-5	EL[2]	EL	A	EL	A	A	A	EL[1,12]	
Trails:	EL	EL	EL	EL	EL	EL	EL	EL	
Area:	EL	EL	EL	EL	EL	EL	EL	EL	
Management Area: A-5 Unroaded Recreation									
Roads:									
ML1	EL	EL	EL	EL	A	EL	EL	EL	
ML2	A	EL	A	EL	A	A	EL	EL[12]	
ML 3-5	A	EL	A	EL	A	A	A	EL[12]	
Trails:	EL	EL	EL	EL	A	EL	EL	EL	
Area:	EL	EL	EL	EL	A	EL	EL	EL	
Management Area: A-6 Semi-primitive Roaded									
Roads:									
ML1	EL	EL	EL	EL	A[3]	EL	EL	A[3]	
ML2	E[3]	E[3]	E[3]	E[3]	E[3]	E[3]	EL**	EL[12]	
ML 3-5	E	EL	A	EL	A	A	A	EL[12]	
Trails:	E[3]	E[3]	E[3]	E[3]	E[3]	E[3]	EL	A[3]	
Area:	E[3,4]	E[3,4]	E[3,4]	E[3,4]	E[3,4]	E[3,4]	EL	A[4]	

Access and Travel Management Guide (Continued)

Facility Type	Non-Lic Class 2 >50" Width	Summer Use Class 1 ATV[13] (ATVs & Quads)	Licensed Motorized Trailbike	Class 3 Non-Lic Motorized Trailbike	Non-Motorized Mountain Bike	High Clear Vehicles (Licensed 4x4's)	Passenger Vehicles	Winter Use	Motorized Water Craft
Management Area: A-7 Special Old Growth									
Roads:									
ML1	EL	EL	EL	EL	EL	EL	EL	EL	
ML2	A	EL	A	EL	A	EL	A	EL[12]	
ML 3-5	A	EL	A	EL	A	A	A	EL[12]	
Trails:	EL	EL	EL	EL	EL	EL	EL	EL	
Area:	EL	EL	EL	EL	EL	EL	EL	EL	
Management Area: A-8 Northern Spotted Owls									
Roads:									
ML1	EL	EL	EL	EL	A-SR	EL	EL	A-SR	
ML2	A	EL	A	EL	A	A	EL	EL	
ML 3-5	A	A	A	A	A	A	A	EL	
Trails:	A-SR	A-SR	A-SR	A-SR	A-SR	A-SR	EL	A-SR	
Area:	EL[5]	EL[5]	EL[5]	EL[5]	EL[5]	EL[5]	EL[5]	EL[5]	
Management Area: A-9 Key Site Riparian									
Roads:									
ML1	EL	EL	EL	EL	A[6]	EL	EL	A[6]	
ML2	A	EL	A	EL	A[6]	A	EL	EL[12]	
ML 3-5	A	A	A	A	A[6]	A	A	EL[12]	
Trails:	EL	EL	EL	EL	A[6]	EL	EL	A[6]	
Area:	EL	EL	EL	EL	EL	EL	EL	A[6]	
Management Area: A-10 Developed Recreation									
Roads:									
ML1	EL	EL	EL	EL	A	EL	EL	A-SR	
ML2	EL	EL	E	EL	A	E	EL	EL[12]	
ML 3-5	EL	EL	E	EL	A	E	E	EL[12]	
Trails:	EL	EL	EL	EL	A	EL	EL	A-SR	
Area:	EL	EL	EL	EL	A	EL	EL	A-SR	
Management Area: A-11 Winter Recreation Areas									
Roads:									
ML1	EL	EL	EL	EL	A-SR	EL	EL	EL	
ML2	E	EL	E	EL	A	E	EL	EL[12]	
ML 3-5	E	EL	E	EL	A	E	E	EL[12]	
Trails:	EL	A[6]	A[6]	A[6]	A[6]	EL	EL	E[6]	
Area:	EL	EL	EL	EL	EL	EL	EL	E[6]	

Access and Travel Management Guide (Continued)

Facility Type	Non-Lic Class 2 >50" Width	Summer Use Class 1 ATV[13] (ATVs & Quads)	Licensed Motorized Trailbike	Class 3 Non-Lic Motorized Trailbike	Non-Motorized Mountain Bike	High Clear Vehicles (Licensed 4x4's)	Passenger Vehicles	Winter Use	Motorized Water Craft
Management Area: A-12 Outdoor Education									
Roads:									
ML1	EL	EL	EL	EL	EL	EL	EL	A-SR	
ML2	A	EL	A	EL	A	A	EL	EL[12]	
ML 3-5	A	EL	A	EL	A	A	A	EL[12]	
Trails:	EL	EL	EL	EL	EL	EL	EL	A[6]-SR	
Area:	EL	EL	EL	EL	EL	EL	EL	A[6]-SR	
Management Area: A-13 Bald Eagle Recovery Area									
Roads:									
ML1	EL	EL	EL	EL	A[7]	EL	EL	A[7]	N/A
ML2	A[7]	EL	A[7]	EL	A[7]	A[7]	EL	EL	N/A
ML 3-5	A[7]	EL	EL	EL	A[7]	A[7]	A[7]	EL	N/A
Trails:	EL	A[6,7]	A[6,7]	A[6,7]	A[6,7]	A[6,7]	EL	A[7]	N/A
Area:	EL	D[7]	D[7]	D[7]	D[7]	D[7]	EL	D[7]	A[6,7]
Management Area: B-1 Wild, Scenic and Recreational - Wild Segments									
Roads:									
ML1	EL	EL	EL	EL	A	EL	EL	EL	N/A
ML2	D	EL	D	EL	A	D	EL	EL	N/A
ML 3-5	D	EL	D	EL	A	D	D	EL	N/A
Trails:	EL	EL	EL	EL	A	EL	EL	EL	N/A
Area:	EL	EL	EL	EL	EL	EL	EL	EL	EL
Management Area: B-1 Scenic Segments									
Roads:									
ML1	EL	EL	EL	EL	A	EL	EL	EL	N/A
ML2	A	EL	A	EL	A	A	EL	EL[12]	N/A
ML 3-5	A	EL	A	EL	A	A	A	EL[12]	N/A
Trails:	A[7]	A[7]	A[7]	A[7]	A[7]	A[7]	EL	EL[6]	N/A
Area:	A	A	A	A	A	A	EL	A	A
Management Area: B-1 Recreational Segments									
Roads:									
ML1	EL	EL	EL	EL	A	EL	EL	EL	N/A
ML2	A	EL	A	EL	A	A	EL	EL[12]	N/A
ML 3-5	A	EL	A	EL	A	A	A	EL[12]	N/A
Trails:	A	A	A	A	A	A	EL	A	N/A
Area:	A	A	A	A	A	A	A	A	A

Access and Travel Management Guide (Continued)

Facility Type	Non-Lic Class 2 >50" Width	Summer Use Class 1 ATV[13] (ATVs & Quads)	Licensed Motorized Trailbike	Class 3 Non-Lic Motorized Trailbike	Non-Motorized Mountain Bike	High Clear Vehicles (Licensed 4x4's)	Passenger Vehicles	Winter Use	Motorized Water Craft
Management Area: B-2 Scenic Viewsheds									
Roads:									
ML1	EL	EL	EL	EL	A	EL	EL	EL	N/A
ML2	E	EL	E	EL	A	A	EL	EL[12]	N/A
ML 3-5	E	EL	E	EL	A	E	E	EL[12]	N/A
Trails:	E	E	E	E	E	E	EL	E	N/A
Area:	A	A	A	A	A	A	EL	A	A
Management Area: B-3 Roaded Recreation									
Roads:									
ML1	EL	EL	EL	EL	A	EL	EL	E	N/A
ML2	E	EL	E	EL	E	E	EL	EL[12]	N/A
ML 3-5	E	EL	E	EL	E	E	E	EL[12]	N/A
Trails:	E[3]	E[3]	E[3]	E[3]	E[3]	E[3]	EL	E[6]	E
Area:	E[3]	E[3]	E[3]	E[3]	E[3]	E[3]	EL	E[6]	E
Management Area: B-4 Pine Oak Habitat									
Roads:									
ML1	EL[8]	EL[8]	EL[8]	EL[8]	EL[8]	EL[8]	EL[8]	EL[8]	N/A
ML2	A	EL	A	EL	A	A	E	EL	N/A
ML 3-5	A	EL	A	EL	A	A	A	EL	N/A
Trails:	A[6,8]	A[6,8]	A[6,8]	A[6,8]	A[6,8]	A[6,8]	EL	A[6,8]	N/A
Area:	EL[8]	EL[8]	EL[8]	EL[8]	EL[8]	EL[8]	EL[8]	EL[8]	EL[8]
Management Area: B-5 Pileated Woodpecker/pine Martin Habitat									
Roads:									
ML1	EL	EL	EL	EL	EL	EL	EL	A	N/A
ML2	A	EL	A	EL	A	A	EL	EL[12]	N/A
ML 3-5	A	EL	A	EL	A	A	A	EL[12]	N/A
Trails:	A[6]	A[6]	A[6]	A[6]	A[6]	A[6]	EL	EL	N/A
Area:	EL	EL	EL	EL	EL	EL	EL	EL	EL
Management Area: B-6 Special Emphasis Watershed									
Roads:									
ML1	EL	EL	EL	EL	D	EL	EL	D[9]	N/A
ML2	D	EL	D	EL	D	D	EL	EL[12]	N/A
ML 3-5	A	EL	A	EL	A	A	A	EL[12]	N/A
Trails:	D[9]	D[9]	D[9]	D[9]	D[9]	D[9]	EL	D[9]	N/A
Area:	D[9]	D[9]	D[9]	D[9]	D[9]	D[9]	EL	D[9]	N/A

Access and Travel Management Guide (Continued)

Facility Type	Non-Lic Class 2 >50" Width	Summer Use Class 1 ATV[13] (ATVs & Quads)	Licensed Motor-ized Trailbike	Class 3 Non-Lic Motor-ized Trailbike	Non-Motor-ized Moun-tain Bike	High Clear Vehicles (Licen-sed 4x4's)	Pas-senger Vehicles	Winter Use	Motor-ized Water Craft
Management Area: B-7 General Riparian Area									
Roads:									
ML1	EL	EL	EL	EL	D	EL	EL	D	N/A
ML2	A	EL	A	EL	A	A	EL	EL[12]	N/A
ML 3-5	E	EL	E	EL	A	E	E	EL[12]	N/A
Trails:	A[8]	A[8]	A[8]	A[8]	A[8]	A[8]	EL	A[8]	N/A
Area:	D	D	D	D	D	D	EL	D	D
Management Area: B-8 Earthflows									
Roads:									
ML1	EL	EL	EL	EL	A[8]	EL	EL	A	N/A
ML2	A	EL	A	EL	A	A	EL	EL[12]	N/A
ML 3-5	A	EL	A	EL	A	A	A	EL[12]	N/A
Trails:	A[8]	A[8]	A[8]	A[8]	A[8]	A[8]	EL	A[8]	N/A
Area:	EL	EL	EL	EL	EL	EL	EL	EL	A
Management Area: B-9 Wildlife Visuals									
Roads:									
ML1	EL	EL	EL	EL	EL	EL	EL	EL	N/A
ML2	A	EL	A	EL	A	A	EL	EL	N/A
ML 3-5	A	EL	A	EL	A	A	A	EL	N/A
Trails:	EL	EL	EL	EL	EL	EL	EL	EL	N/A
Area:	EL	EL	EL	EL	EL	EL	EL	EL	EL
Management Area: B-10 Deer and Elk Winter Range									
Roads:									
ML1	EL	EL	EL	EL	EL	EL	EL	EL	EL
ML2	A	EL	A[10]	EL	A[8]	A	EL	EL	N/A
ML 3-5	A[8]	EL	A[10]	EL	A[8]	A	A[8]	EL	N/A
Trails:	A[6,8]	A[6,8]	A[6,8]	A[6,8]	A[6,8]	A[6,8]	EL	A[6,8]	N/A
Area:	EL[10]	EL[10]	EL[10]	EL[10]	EL[10]	EL[10]	EL[10]	EL[10]	EL[10]
Management Area: B-11 Deer and Elk Summer Range									
Roads:									
ML1	EL	EL	A	EL	EL	EL	EL	A	
ML2	A	EL	A	EL	A	A	EL	EL[12]	
ML 3-5	A	EL	EL	EL	A	A	A	EL[12]	
Trails:	EL	EL	EL	EL	A[8]	EL	EL	A[8]	
Area:	EL	EL	EL	EL	A	EL	EL	A	

Access and Travel Management Guide (Continued)

Facility Type	Non-Lic Class 2 >50" Width	Summer Use Class 1 ATV[13] (ATVs & Quads)	Licensed Motorized Trailbike	Class 3 Non-Lic Motorized Trailbike	Non-Motorized Mountain Bike	High Clear Vehicles (Licensed 4x4's)	Passenger Vehicles	Winter Use	Motorized Water Craft
Management Area: B-12 Back Country Lakes									
Roads:									
ML1	EL	EL	EL	EL	A	EL	EL	A	N/A
ML2	A	EL	A	EL	A	A	EL	EL[12]	N/A
ML 3-5	A	EL	A	EL	A	A	A	EL[12]	N/A
Trails:	A	A	A	A	A	A	EL	A	N/A
Area:	A[10]	A[10]	A[10]	A[10]	A[10]	A[10]	EL	A[10]	A
Management Area: C-1 Timber Emphasis									
Roads:									
ML1	EL	EL	EL	EL	A	EL	EL	E[11]	N/A
ML2	E	EL	E	EL	A[13]	·	EL	EL[12]	N/A
ML 3-5	E	EL	E	EL	A[13]	E	E	EL[12]	N/A
Trails:	E[11]	E[11]	E[11]	E[11]	E[11]	EL	EL	E[11]	E[11]
Area:	E[11]	E[11]	E[11]	E[11]	E[11]	EL	EL	E[11]	E[11]
Management Area: D - Bull Run									
Roads:									
ML1	This area is closed to public entry by law.								
ML2									
ML 3-5									
Trails:									
Area:									
Management Area: E - Columbia River Gorge National Scenic Area									
Roads:									
ML1	EL	EL	EL	EL	A	EL	EL	A[8]	
ML2	A	EL	A	EL	A	A	EL	EL[12]	
ML 3-5	A	EL	A	EL	A	A	A	EL[12]	
Trails:	EL	EL	EL	EL	A[8]	EL	EL	EL	
Area:	EL	EL	EL	EL	EL	EL	EL	EL	

D = Discourage; A = Accept; E = Encourage; EL = Eliminate

*** Restricted by either State or Federal law.*

[1] *Winter use on Skyline Road is accepted.*

[2] *Use is accepted on powerline right-of-way.*

[3] *In designated areas and trails.*

[4] *The area north of Wahtum Lake, all ORV use is eliminated.*

[5] *On designated trails.*

[6] *Use may be allowed where designated.*

[7] *Accepted only from August 15 to January 1.*

[8] *Human access can be restricted and may be excluded from 12/1 to 4/1 for wildlife protection.*

[9] *Eliminate all ORV use in both The Dalles Watershed Management Unit and Still Creek.*

[10] *Motorized access should be discouraged in foreground areas (i.e. 100 feet) of lakes with the following exceptions: north end of Summit Lake, Scout Lake, north side of Kinzel Lake.*

[11] *These areas are generally open except for specific areas shown on the OHV map.*

[12] *When ML 2-5 roads are not maintained for wheeled traffic, these roads may be opened to snow mobile travel when consistent with management area goals.*

[13] *A Class 1 ATV is defined by Oregon Motor Vehicles Division as a motorized off-highway recreational vehicle that is 50 inches or less in width, a dry weight of 600 pounds or less, traveling on three or more low-pressure tires, with a saddle for the operator and that include lights, brakes, and a muffler.*

[14] *Discourage in-sale areas to avoid conflicts with commercial traffic.*

Table C-1 Specific Direction For Trails*

Number	Trail Name	Existing	Proposed[1]	Total	Summer[2]	Winter[3]	District[4]
400	Gorge	7.0	14.9	21.9	B/D		04
401	Tanner Butte	8.0		8.0	A		04
401B	Dublin Lake	0.4		0.4	A		04
401D	Wauna Point	0.6		0.6	A		04
401E	Tanner Springs	0.2		0.2	A		04
402	Wauna Viewpoint	1.8		1.8	C		04
404	Talapus Route		4.0	4.0	A		04
405	Ruckel Creek	5.8		5.8	A		04
405A	Benson-Ruckel	1.0		1.0	A		04
405B	West Benson Way	3.1		3.1	A		04
405C	Benson Spur	0.5		0.5	A		04
406	Herman Creek	11.2		11.2	B		04
406A	Mud Lake	0.3		0.3	A		04
406B	Ant Hill	1.9		1.9	D		04
406E	Herman Bridge	1.3		1.3	B		04
406H	Whatum Lake	1.6	0.1	1.7	B		04
408	Gorton Creek	9.2		9.2	A		04
409	Rainy Wahtum	4.0		4.0	D		04
410	Herman Cutoff	2.3		2.3	A		04
411	Wyeth	6.5		6.5	A		04
411	Wyeth	2.1		2.1	A		04
412	Plateau Cutoff	1.0		1.0	A		04
413	Mt. Defiance	5.1		5.1	A		06
413B	Mt. Defiance Summit	0.2		0.2	A		06
413C	Bear Lake	0.7		0.7	A		06
414	Starvation Creek	3.1		3.1	C		06
414B	Starvation Cutoff	0.4		0.4	C		06
415	Angels Rest	4.9		4.9	A		04
416	Indian Mt.	1.5		1.5	A		04
417	Mitchell Point	2.0		2.0	B		06
418	Green Point Ridge	2.7		2.7	A		04
419	Vista Pt.	0.8		0.8	A		04
420	Wahkeena	2.0		2.0	A		06
420B	Monument Viewpoint	0.1		0.1	A		04
420C	Devils Rest	1.6		1.6	A		04
421	Perdition	0.9		0.9	A		04
422	Deadwood	0.6		0.6	A		04
423	North Lake	2.0		2.0	A		06
423A	Rainy Lake	0.6		0.6	A		06
424	Oneonta	6.6		6.6	A		04
425	Horsetail Creek	5.6		5.6	A		04
427	Franklin Ridge	2.2		2.2	A		04
428	Nesmith Point	4.6		4.6	A		04

* *Any discrepancies between this table and chapter 4 Standards and Guidelines shall be resolved in favor of the Standards and Guidelines.*

Table C-1 Specific Direction for Trails (continued)

Number	Trail Name	Existing	Proposed[1]	Total	Summer[2]	Winter[3]	District[4]
429	Wauneka Point	3.0		3.0	A		04
430	Moffett Creek	5.3		5.0	A		04
433	Eagle Tanner	5.0		5.0	A		04
434	Eagle Benson	3.0		3.0	A		04
435	Indian Springs	2.0		2.0	A		04
436	Wahclella Falls	1.1		1.1	A		04
437	Ridge Cutoff	0.7		0.7	A		04
438	Horsetail Falls	1.3		1.3	A		04
439	Buck Point	0.8		0.8	A		04
440	Eagle Creek	13.3		13.3	A		04
440A	Metlako Falls	0.1		0.1	A		04
440B	Lower Punchbowl	0.2		0.2	A		04
441	Larch Mt.	4.8		4.8	A		04
441	Larch Mt.	2.0		2.0	C		04
441A	Top of Falls VP	0.2		0.2	A		04
441B	Wheelchair	0.1		0.1	A		04
441J	High Water Route	0.2		0.2	A		04
442	Return	0.6		0.6	A		04
443	Sherrard Point	0.3		0.3	A		04
444	Multnomah Creek Way	2.7		2.7	C		04
445	Chinidere Mt.	1.0		1.0	A		04
446	Multnomah Creek Spur	0.5		0.5	C		04
447	Nick Eaton	6.1		6.1	A		04
448	Tanner Cutoff	3.0		3.0	A		04
450	Lookout Mountain	3.5		3.5	F		01
451	North Section Line	4.6		4.6	F		01
455	Bottle Prairie	3.0		3.0	D		01
456	Fifteen Mile	10.3		10.3	F		01
456A	Fret Creek	2.1		2.1	B		01
456B	Ramsey	2.5		2.5	D		01
457	Cedar Creek	4.2		4.2	F		01
458	Divide	8.1		8.1	B		01
459	Bell Creek Way	3.0		3.0	A		04
460	Tygh Creek	7.4		7.4	B		01
461	Badger Rim		4.5	4.5	B		01
462	Jordon Cutoff	1.3		1.3	D		01
463	Boulder Lake	2.8		2.8	D		01
463A	Little Boulder	0.8		0.8	D		01
463B	Boulder Lake Shore	0.3		0.3	A		01
464	Crane Prairie	2.4		2.4	B		01
465	Pine Creek	2.0		2.0	B		01
466	Three Mile	3.1		3.1	F		01
466A	Mud Spring Trail	1.3		1.3	B		01
467	Post Camp	2.8		2.8	B		01

Table C-1 Specific Direction For Trails (continued)

Number	Trail Name	Existing	Proposed[1]	Total	Summer[2]	Winter[3]	District[4]
468	School Canyon	3.0		3.0	B		01
469	Little Badger	7.3		7.3	B		01
470	Douglas Cabin	4.0		4.0	B		01
470A	Gordon Butte	3.5		3.5	B		01
471	Bonny Meadows	3.2		3.2	B		02
472	Hidden Meadows	3.4		3.4	D		01
473	Forest Creek	3.8		3.8	D		01
474	Knebal Springs	4.0		4.0	D		01
475	Rocky Butte	2.2		2.2	F		01
476	Casey Creek Way	2.1		2.1	A		04
477	Badger Creek Cuttoff	3.3		3.3	B		01
478	Crane Creek	6.2		6.2	F		01
479	Badger Creek	12.7		12.7	B		01
479A	Badger Lake	0.5		0.5	B		01
480	Gumjuwac	2.2		2.2	B		01
482	Palmeter	2.0		2.0	B	X	02
482A	Devils Half Acre	2.0		2.0	A	X	02
483	Blue Box	4.8		4.8	B	X	02
484	Frog Lake Butte	2.0		2.0	A	X	02
487	Clear Creek	0.8		0.8	D		02
487A	Rimrock	3.0		3.0	B		02
490A	Camas	3.0		3.0	D		02
491	Stone Creek	3.0		3.0	D		02
492	Jackpot Meadows	1.8		1.8	B		02
492	Jackpot Meadows	1.0		1.0	D		09
493	High Prairie	1.5		1.5	A		01
495	Twin Lakes	3.0		3.0	B	X	02
495	Twin Lakes	3.0		3.0		S	02
496	Eight Mile Loop		4.0		C	X	01
499	Linney Creek	0.5		0.5	A		02
500	Little Crater Lake	0.3		0.3	A		02
501	Eagle Creek	5.9		5.9	B		09
502	Old Baldy	4.5		4.5	D		05
502A	Plaza-Squaw Mountain	1.7		1.7	D		05
504	Eagle Creek Cutoff	2.5		2.5	B		09
505	Fanton	4.4		4.4	D		05
507	Corral Springs	3.0		3.0	D		05
510	Shining Lake	4.7		4.7	D		05
512	Serene Lake	4.0		4.0	D		06
515	Memaloose Lake	1.5		1.5	B	X	05
516	Hillockburn	1.5		1.5	A		05
517	Grouse Point	9.6		9.6	D	X	05
518	Dry Ridge	6.0		6.0	D	X	05

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Table C-1 Specific Direction For Trails (continued)

Number	Trail Name	Existing	Proposed[1]	Total	Summer[2]	Winter[3]	District[4]
520	Eagle Creek Butte	0.1		0.1	B		09
521	Huxley Lake	3.5		3.5	F		05
525	Timothy Lake High Rock		5.5	5.5	D		02
528	Timothy Lake	8.0		8.0	D		02
529	Timothy Lake Trails		25.0	25.0	D		02
530	Frog Lake	0.7		0.7	B	X	02
534	Miller	2.5		2.5	D		02
535	Catalapa Lake	1.0		1.0	A	X	02
538	White River	4.0	4.4	8.3	D		02
541	Fish Creek Mountain	2.5		2.5	A		05
542	Skookum Lake	1.0		1.0	B		05
543	Thunder Mountain	2.0		2.0	B		05
544	Bagby Hot Springs	12.4		12.4	B		05
545	Batty Butte	0.5		0.5	A		05
546	Whetstone	4.1		4.1	B		05
547	Roaring/Splinter		8.0	8.0	D		05
549	Dickey Lake	1.4		1.4	B		05
550	Bull of the Woods	3.2		3.2	B		05
551	Pansy Lake	2.0		2.0	B		05
553	Dickey Creek	5.9		5.9	B		05
554	Welcome Lakes	5.0		5.0	B		05
555	Schreiner Peak	2.2		2.2	B		05
556	West Lake Way	1.1		1.1	B		05
557	Geronimo	2.2		2.2	B		05
558	Mother Lode	5.9		5.9	B		05
559	Elk Lake Creek	8.9		8.9	B		05
560	McCubbins OHV		31.6	31.6	F		02
561	Winter Dispersed		4.0	4.0		X/S	05
562	Mt. Lowe	0.5		0.5	B		03
564	Rho Ridge	8.4		8.4	D		03
564A	Hawk Mt.	0.6		0.6	A		03
565	Round Lake	0.9		0.9	D		03
569	Rho Creek	4.2		4.2	B		03
573	Twin Lakes	4.6		4.6	B		05
574	Alder Flat	0.9		0.9	A		03
574A	Alder Flat Beaver Pond		0.5	0.5	A		03
600	Timberline	2.0		2.0	A		03
600	Timberline Bald	1.0		1.0	A		09
600	Timberline	19.9		19.9	A		06
600A	Tilly Jane	1.5		1.5	B		06
600B	Cooper Spur	2.0		2.0	A		06
600C	Dollar Lake	0.3		0.3	A		06
600D	Barrett Spur	1.3		1.3	A		06

Table C-1 Specific Direction For Trails (continued)

Number	Trail Name	Existing	Proposed[1]	Total	Summer[2]	Winter[3]	District[4]
600H	Eden Park	1.8		1.8	A		06
600M	McNeil Point	1.2		1.2	A		06
600X	Eliot Glacier Point	0.6		0.6	A		06
601A	Barlow Trail	1.5		1.5	C	X	09
610	Kingsly/Whatum		3.7	3.7	D		06
615	Buck Peak	0.5		0.5	B		06
616	Lost Lake Butte	2.0		2.0	B		06
617	Huckleberry Mountain	2.5		2.5	B		06
618A	Lake Branch Cascades	0.8		0.8	C		06
620	Kate Creek Ski	0.7		0.7	A	X	06
626	Vista Ridge	3.1		3.1	A/C		06
627	McGee Creek	1.3		1.3	B		06
629	Laurence Lake H. Loop		4.0	4.0	C/D		06
630	Pinnacle Ridge	3.4		3.4	A		06
631	Elk Cove	3.9		3.9	A		06
632	Laurance Lake Loop		4.0	4.0	A		06
639	Cook Meadow	2.0		2.0	D		01
640	Polallie Falls		1.0	1.0	A		06
641	Wallalute Falls		0.5	0.5	A		06
643	Tilly Jane Ski	2.5		2.5	C	X	06
643A	Polallie Ridge	2.0		2.0	D		06
644	Lamberson Spur	2.2		2.2	B		06
645	Elk Meadows	8.8		8.8	B		06
645A	Elk Meadows Perimeter	0.7		0.7	B		06
646	Newton Creek	1.8		1.8	B		06
647	Blue Grass Ridge	5.5		5.5	D		06
647B	Elk Meadows Blue Tie	0.4		0.4	B		06
647C	Elk Meadows Vista	0.3		0.3	D		06
650	East Fork	5.8		5.8	A/C	X	06
650A	Tamanawas Falls	1.4		1.4	A		06
650B	Tamanawas Tie	0.4		0.4	A		06
652	Gnarl Ridge	1.0		1.0	B		06
652A	Gnarl Ridge Cut-Off	0.6		0.6	B		06
655	Old Skyline Group		5.8	5.8	B		06
656	Lake Shore	3.2		3.2	A		06
657	Lost Lake Old Growth		1.1	1.1	A		06
660	Alpine Ski	3.3		3.3	C	X	09
661	Glade	2.5		2.5	C	X	09
664	Mirror Lake	3.2		3.2	A		09
665	Kinzel Lake	2.3		2.3	A		09
667	Umbrella Falls	1.0		1.0	A		09
667	Umbrella Falls	2.0		2.0	C		06
667A	Umbrella Falls	0.2		0.2	A		06

Table C-1 Specific Direction For Trails (continued)

Number	Trail Name	Existing	Proposed[1]	Total	Summer[2]	Winter[3]	District[4]
667.1	Umbrella Falls	1.3		1.3	A		06
667C	Sahalie Falls	1.7		1.7	C		06
670	Barlow Butte	5.5		5.5	B		02
671	Eureka Peak	2.0		2.0	C		09
672	Dry Lake	1.0		1.0	A		09
673	Veda Lake	1.4		1.4	A		09
674	Fir Tree	2.7		2.7	A		09
675	Dog River	5.5		5.5	D		06
677	Tea Cup Lake	0.3		0.3	A		06
678	Zigzag	1.8		1.8	C		06
678A	Zigzag Vista	0.2		0.2	C		06
679	Meadows Creek Ski	1.3		1.3	A	X	06
679A	Meadows Ski	3.0		3.0	A	X	06
680	Jean Lake	0.5		0.5	A		01
681	Tea Cup Lake Ski	1.5		1.5	A	X	06
682	Pocket Creek Ski	4.5		4.5	A	X	06
682A	Pocket Creek Tie Ski	1.0		1.0	A	X	06
683	Underhill Trail	3.0		3.0	A		01
684D	Bennett Pass Ski	3.0		3.0	C	X	06
685	Gunsight	4.5		4.5	D		06
685B	Camp Windy	1.0		1.0	B		01
687	Page Ski Trails		5.0	5.0		S	06
688	Surveyors Ridge	16.0		16.0	D		06
688A	Oak Ridge	2.3		2.3	D		06
688M	Surveyors Viewpoint	0.1		0.1	D		06
689	Red Top Meadows	1.0		1.0	C	X	09
690	Sahalie Falls Ski	1.3		1.3	A	X	06
691	Summit	2.6		2.6	C	X	09
691	Clark Creek Ski	1.5		1.5	A	X	06
692	Kurt's Konnection	1.0		1.0	C	X	09
692A	Enid Lake Loop	1.0		1.0	C	X	09
693	Rocky Ski	0.3		0.3	A	X	06
694	Newton Creek Ski	3.0		3.0	B	X	06
694A	Newton Tie Ski	0.3		0.3	A	X	06
695	Robinhood Loop Ski	5.5		5.5	A	X	06
696	Horse Thief Meadows Ski	5.0		5.0	A	X	06
697	Elk Meadows Ski	1.7		1.7	A	X	06
700	Shellrock Lake	2.5		2.5	D		03
702	Cache Meadow	1.4		1.4	B		03
703	Cripple Creek	5.3		5.3	D		03
704	Rim Rock	3.5		3.5	B		03
705	Cottonwood Meadow	3.3	-1.1	2.2	A		03
706	Lodgepole	5.4		5.4	D		03

Table C-1 Specific Direction For Trails (continued)

Number	Trail Name	Existing	Proposed[1]	Total	Summer[2]	Winter[3]	District[4]
708	Gibson Lake	2.0		2.0	A		03
710	Driveway	5.0		5.0	B		02
712	Horseshoe Saddle	1.0		1.0	B		03
714	Ruddy Hill	0.8		0.8	A		03
715	Clackamas River	7.8	13.0	20.8	A		05
716	Russ Lake	0.9		0.9	D		03
717	Fish Lake	4.0		4.0	D		03
718	Patato Butte	1.0		1.0	A		03
719	Red Lake	5.7		5.7	D		03
720	Olallie Butte	3.8		3.8	B		03
723	Riverside NRT	4.0		4.0	A		03
724	Anvil Lake	1.2		1.2	B		03
725	Top Lake	0.3		0.3	B		03
727	Pyramid Lake	0.5		0.5	A		03
728	Buck Lake	0.5		0.5	A		03
729	Monon Lake	2.7		2.7	B		03
730	Long Lake	0.7		0.7	A		03
731	Olallie Lake	2.9		2.9	B	X	03
732	Monollie	0.2		0.2	B		03
733	Timber Lake	0.6		0.6	B		03
735	Double Peaks	0.8		0.8	A		03
740	Pyramid Butte	0.5		0.5	A		03
742	Salmon River	14.2		14.2	A		09
742A	Old Salmon River	2.6		2.6	C		09
742B	Salmon/Bonanza Tie		1.4	1.4	A		09
744	Breitenbush Cascades	0.2		0.2	A		03
755	Camptown/Crosstown		4.0	4.0	C	S	09
757	Paradise Park Loop	2.4		2.4	A		09
758	Summit Meadows		2.0	2.0	B		09
759	Laurel Hill Chute		1.0	1.0	B		09
761	Trillium Lake Loop		1.1	1.1	A		09
765	Castle Canyon	0.9		0.9	A		09
766	Flag Mountain	2.1		2.1	D		09
767	Devils Tie	0.5		0.5	B		09
769	Slide Mountain View		2.5	2.5	A		09
770	Sandy River	3.5		3.5	D		09
771	Yocum Ridge	4.7		4.7	A		09
772	Burnt Lake	7.3		7.3	A		09
773	Cast Creek	3.8		3.8	B		09
774	Horseshoe	5.3		5.3	B		09
775	Zigzag Mountain	14.4		14.4	B		09
776	Lost Creek	0.3		0.3	A		09
776A	Lost Creek Loop		1.5	1.5	C	X	09
778	Paradise Park	5.8		5.8	B		09

Table C-1 Specific Direction For Trails (continued)

Number	Trail Name	Existing	Proposed[1]	Total	Summer[2]	Winter[3]	District[4]
779	Hidden Lake	5.0		5.0	B		09
780	Still Creek	1.6		1.6	D		09
780A	Still Creek Loop	0.5		0.5	C	X	09
781	Douglas	6.4		6.4	B		09
781F	Wildcat Lookout	0.7		0.7	B		09
782	McIntyre Ridge	5.1		5.1	B		09
782B	Alpine Loop	0.5		0.5	C	X	09
783	Plaza	7.3		7.3	B		09
783A	Boulder Ridge	4.4		4.4	A		09
784	Bald Mountain	2.5		2.5	B		09
785	Top Spur	0.5		0.5	B		09
786	Bonanza	4.6		4.6	A		09
787	Salmon Mountain	1.8		1.8	A		09
788	Plaza Lake	1.0		1.0	B		09
789	West Zigzag	2.4		2.4	B		09
791	Salmon Butte	4.5		4.5	B		09
793	Hunchback	10.0		10.0	A		09
793A	Green Canyon	3.6		3.6	A		09
794	Cool Creek	4.8		4.8	C		09
795	Pioneer Bridle	9.9		9.9	D		09
795C	Little Zigzag Falls	0.3		0.3	A		09
796	Cast Lake	0.5		0.5	B		09
797	Ramona Falls Loop	3.7		3.7	B		09
798	Mountaineer	1.2		1.2	A		09
2000	Pacific Crest Trail	21.0		21.0	B		09
2000	Pacific Crest Trail	14.0		14.0	B		06
2000	Pacific Crest Trail	25.0		25.0	B		03
2000	Pacific Crest Trail	20.8		20.8	B		04
ROAD	26-522 Glacier View	2.0		2.0		X	09
ROAD	1825 Old Maid Flats	2.7		2.7		X	09
ROAD	1825 Lolo Pass Loop	14.9		14.9		S	09
ROAD	2613 Sherar Burn	10.0		10.0	F	S	09
ROAD	226 Snowbunny	2.0		2.0		S	09
ROAD	2656 Mud Creek Loop	6.0		6.0		S	09
ROAD	2656-254 Lost Man	1.2		1.2		S	09
ROAD	2656-955 Quarry Con.	1.0		1.0		S	09
ROAD	Barlow Road	3.0		3.0		X	02
ROAD	Barlow Ridge Road	3.5		3.5		X	02
	Pioneer Trail	2.0		2.0		X	02
	Mineral Jane E & W	6.0		6.0		X	02
ROAD	Frog Lake Buttes Road	2.0		2.0		X/S	02
ROAD	Salmon Meadows	0.5		0.5		X	02
ROAD	Bennett Pass Road	5.0		5.0		X/S	02

Table C-1 Specific Direction For Trails (continued)

Number	Trail Name	Existing	Proposed[1]	Total	Summer[2]	Winter[3]	District[4]
ROAD	48 White River	6.0		6.0		X	02
	Grave Trail	1.0		1.0		X	02
	Beaver Meadows Loop	2.0		2.0		X	02
ROAD	2612 Still Creek	1.6		1.6		S	09
ROAD	674B Tie	1.0		1.0		S	09
ROAD	2656 Trillium Lake	4.5		4.5		S	09
ROAD	79A Easy Does It	1.0		1.0		X	09
ROAD	2645 West Leg	5.1		5.1		X	09
ROAD	26-228 White Away	1.0		1.0		X	09
ROAD	48 White River	3.2		3.2		X	09
	Boy Scout Ridge	2.5		2.5	D	X	09
	Wagon Skid	2.0		2.0	D	X	06
	Mitchell Point Tie	0.3		0.3	D		06
	Gibson Prairie Tie	0.2		0.2	D		06

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[1] *Miles proposed for the first five years.*

[2] *A. Hiker only; B. Hiker/Horse; C. Hiker/Mountain Bike; D. Hiker/Horse/Mountain Bike; E. Hiker/Mountain Bike/OHV F. Hiker/Horse/Mountain Bike/OHV*

[3] *X - Cross Country Ski; S - Snowmobile*

[4] *01 Barlow; 02 Bear Springs; 03 Clackamas; 04 Columbia Gorge; 05 Estacada; 06 Hood River; 09 Zigzag*

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Zone of Influence (see Forest Area of Influence)

Glossary

Glossary

A

Acre Equivalent

When applied to habitat improvement or improvement structures this term reflects overall habitat benefits derived. It reflects the zone of influence of the habitat improvement for the target species. For example, a single water development for upland game birds occupies very little space but has an acre equivalent of 160 because it serves 160 acres of bird habitat. A single water structure for big game has a value of 640 because it has a larger zone of influence for the more mobile big-game animals.

Acre-Foot (AF)

A water measurement term equal to the amount of water that would cover an area of one acre to a depth of one foot (43,560 cubic feet).

Activity

Actions, measures, or treatments that are undertaken that directly or indirectly produce, enhance, or maintain forest outputs and rangeland outputs, or achieve administrative and environmental quality objectives. Forest Service activity definitions, codes, and units of measure are contained in the Management Information Handbook (FSM 1309.11).

Air Quality Related Values (AQRV)

Those features or properties of a Class I area that made the area worthy of designation as a wilderness and that would or could be adversely affected by air pollution. Any physical, chemical, or biological component of an ecosystem that can be affected by changes in air pollutant levels. As an example: visual range as measured from a vista may be shortened by the presence of fine particulates in the air. Similarly a threatened or endangered plant species may be sensitive to sulphur dioxide levels.

Airshed

A geographical area that, because of topography, meteorology, and climate, shares the same air.

Allocated Funds

Funds from sources other than Congressionally appropriated funds. Allocated funds include the Senior Community Service Program (H04), brush disposal (BD), Knutson-Vandenberg cooperative deposits (K-V).

Allowable Sale Quantity

The quantity of timber that may be sold from the area of land covered by the Forest Plan for a time period specified by the plan. This quantity is usually expressed on an annual basis as the average annual allowable sale quantity. (The allowable sale quantity applies only to the lands determined to be suitable for timber production, and to the utilization standards specified in the land and resource management plan.)

Alternative

One of several policies, plans, or projects proposed for decision making.

Analysis Area

The fundamental unit of land required by the Forest Planning Optimization Model (FORPLAN). Delineators include land and location characteristics of importance to the Planning Questions which cause significant differences in quantifiable items (yields, costs, benefits) pertaining to the conditions.

Amenity

An object, feature, quality, or experience that gives pleasure or is pleasing to the mind or senses. Amenity value is typically used in land use planning to describe those resource properties for which market values (or proxy values) are not or cannot be established.

AMS

An abbreviation of Analysis of the Management Situation.

Anadromous Fish

Those species of fish that mature in sea and migrate into streams to spawn. Salmon, steelhead, and shad are examples.

Analysis Area

A delineated area of land subject to analysis of (1) responses to proposed management practices in the production, enhancement, or maintenance of forest and rangeland outputs and environmental quality objectives and (2) economic and social impacts.

Analysis of the Management Situation

A determination of the ability of the planning area to supply goods and services in response to society's demand for those goods and services.

Animal Unit Month (AUM)

The quantity of forage required by one mature cow (1,000 pounds), or the equivalent for one month, based upon average daily forage consumption of 26 pounds of dry matter per day (800 pounds/month).

Appropriate Suppression Response

The planned strategy for suppression action (in terms of Kind, amount, and timing) on a wildfire which most efficiently meets fire management direction under current and expected burning conditions. It may range in objective from prompt control to one of containment or confinement.

Appropriated Funds

Funds from the U. S. Treasury, which Congress has authorized the Forest Service to obligate. This is the sum of operational, capital investment, and backlog costs.

Aquatic Ecosystems

Stream channels, lakes, marshes or ponds, etc., and the plant and animal communities they support.

Aquatic Habitat

Habitat directly related to water.

Aquifer

A geologic formation or structure that contains and transmits water in sufficient quantity to supply the needs for water development. Aquifers are usually saturated sands, gravel, or fractured rock, etc.

Arterial Roads

See Roads.

Assessment

The Forest and Rangeland Renewable Resource Assessment required by RPA.

AUMs

An abbreviation of Animal Unit Months.

B

Background

The visible terrain beyond the foreground and middleground where individual trees are not visible but are blended into the total fabric of the forest stand (see Foreground and Middleground).

Basal Area

The cross-sectional area of a stand of trees measured at breast height. The area is expressed in square feet.

Base Sale Schedule

A Timber Sale Schedule formulated on the basis that the quantity of timber planned for sale and harvest for any future decade is equal to or greater than the planned sale and harvest for the preceding decade, and this planned sale and harvest for any decade is not greater than long-term sustained yield capacity. (36 CFR 219.3).

Benchmark Levels

The outputs and costs for managing the Forest at certain levels of management so that a comparison could be made on costs, values, and effects.

Benefit

The results of a proposed activity, program or project expressed in monetary or nonmonetary terms.

Benefit-Cost Ratio

Measure of economic efficiency computed by dividing total discounted primary benefits by total discounted economic costs.

Best Management Practices (BMP)

A practice or combination of practices that are the most effective and practical (including technological, economic and institutional considerations) means of preventing or reducing the amount of pollution generated by non-point sources to a level compatible with water quality goals.

Big Game

Those species of large mammals normally managed for sport hunting.

Biological Growth Potential

The average net growth attainable in a fully stocked natural forest stand. (36 CFR 2193)

Biological Potential

The maximum amount of sustainable wood fiber obtainable by application of intensive management (timber) practices to acres classified as commercial forest land. The needs of other forest uses are not incorporated.

Biological Control

Biological control is the use of parasites, predators, or disease pathogens (bacteria, fungi, viruses, and others) to suppress pest populations.

Biomass

The total quantity (at a given time) of living organisms of one or more species per unit of space (species biomass), or the total quantity of all the species in a biotic community (community biomass).

Boulder-Rubble Streams

Streams that are characterized by boulder (greater than 1 foot in diameter) and rubble (6 to 12 inches in diameter) bottoms.

British Thermal Unit (BTU)

The amount of heat required to raise the temperature of one pound of water one degree Fahrenheit.

Broadcast Burn

Allowing a prescribed fire to burn over a designated area within well-defined boundaries for a reduction of fuel hazard or as a silvicultural treatment, or both.

Brush

A growth of shrubs or small trees usually of a type undesirable to livestock or timber management.

BTU

An abbreviation of British Thermal Unit.

C

Calibration

The process of predicting modeled fire sizes and fire intensity levels for each Fire Management Analysis Zone. The process uses historical occurrence and burned acreage to accurately reflect the "real world." Adjustments are based on modeling the current fire organization (1978) against historical fire occurrence (1970-1979) using the same dispatch of fire fighting forces philosophy and suppression strategies.

Capability

The potential of an area of land to produce resources, supply goods and services, and allow resource uses under an assumed set of management practices at a given level of management intensity. Capability depends upon current conditions and site conditions such as climate, slope, landform, soils and geology, as well as the application of management practices, such as silviculture or protection from fire, insects, and disease. (36 CFR 219.3)

Categorical Exclusion

A decision to exclude an action from the need to document the environmental analysis in an Environmental Assessment or EIS. It is based on the responsible official finding that the action will have no significant effect on the human environment, individually or cumulatively. If there is any uncertainty regarding effects; appropriate documentation of the analysis is required.

CEQ

Council on Environmental Quality.

Chargeable Timber Volume

Timber removed from regulated forest land that contributes to the allowable sale quantity.

Chemical Control

A method to control insect populations or tree disease through the use of applied chemicals.

Class I Wilderness

Those wilderness over 5,000 acres which were in existence as of August 7, 1977. All other National Forest System lands are Class II, including new wildernesses and expansions to Class I wildernesses which occurred after August 7, 1977.

Clearcutting

The harvesting in one cut of all trees in an area for the purpose of creating a new, even-aged stand. The area harvested may be a patch, stand, or strip large enough to be mapped or recorded as a separate age class in planning for sustained yield.

Climax

The culminating stage in plant succession for a given site where the vegetation has reached a highly stable condition.

Climax Species

Those species that dominate the forest stand in either numbers per unit area or biomass at climax.

Code of Federal Regulations (CFR)

The listing of various regulations pertaining to management and administration of the National Forest.

Collector Road System

See Roads.

Commercial Forest Land (CFL)

Land that is producing, or is capable of producing, crops of industrial wood and (1) has not been withdrawn by Congress, the Secretary of Agriculture, or the Chief of the Forest Service; (2) land where existing technology and knowledge is available to ensure timber production without irreversible damage to soil productivity or watershed conditions; and (3) land where existing technology and knowledge, as reflected in current research and experience, provides reasonable assurance that adequate restocking can be obtained within 5 years after final harvesting.

Commercial Thinning

Any type of tree thinning that produces merchantable material at least equal in value to the direct costs of harvesting.

Commodity

A transportable resource product with commercial value; all resource products which are articles of commerce.

Common Varieties

Nonmineralized sand, gravel, stone, etc. (See Mineral Materials.)

Community Stability

A community's capacity to handle change without major hardships or disruptions to component groups or institutions. Measurement of community stability requires identification of the type and rate of proposed change and an assessment of the community's capacity to accommodate that level of change.

Concern

A point, matter, or question raised by management that must be addressed in the planning process.

Confine

To restrict the fire spread within a predetermined area principally by use of natural or preconstructed barriers or environmental conditions. Suppression action may be minimal and limited to surveillance under appropriate conditions.

Congressionally Classified and Designated Areas

Areas that require Congressional enactment for their establishment, such as National Wilderness

Areas, National Wild and Scenic Rivers, and National Recreation Areas.

Conifer

A group of cone-bearing trees, mostly evergreen, such as pine, spruce, fir, etc.

Consumptive Use

Those uses of a resource that reduce its supply.

Contain

To surround a fire, and any spot fires therefrom, with control line, as needed, which can reasonably be expected to check the fire's spread under prevailing and predicted conditions. The normal suppression tactic is indirect attack, allowing the fire to burn to human-made or natural barrier with little or no mop-up.

Control

To complete the control line around a fire and around any spot fires therefrom and any interior islands of vegetation to be saved. Firefighters will also burn out any unburned area adjacent to the fire side of the control line, and cool down all hot spots that are immediate threats to the control line until the line can reasonably be expected to hold under foreseeable conditions. The normal tactic is direct attack on the fire, if possible, and mop-up to extinguish all fire.

Core Area

(As related to spotted owl.) An area encompassing at least 300 contiguous acres of old growth forest suitable for nesting and reproduction. The area consists of a portion of the territory required by a pair of owls, the nest site, and principal roost areas.

Corridor

A linear strip of land identified for the present or future location of transportation or utility rights-of-way. (36 CFR 219.3)

Cost Efficiency

The usefulness of specified inputs (costs) to produce specified outputs (benefits). In measuring cost efficiency, some outputs, including environmental, economic, or social impacts, are not assigned monetary values but are achieved at specified levels in the least cost manner. Cost efficiency is usually measured using present net value, although use of benefit-cost ratios and rates of return may be appropriate. (36 CFR 219.3)

Cost, Capital Investment

The cost of man made structures, facilities, or improvements in natural resources used as inputs in production processes to produce outputs over one or more planning periods.

Cost-Effective

Achieving specified outputs or objectives under given conditions for the least cost.

Cost, Fixed

A cost that is committed for the time horizon of planning or the decision being considered. Fixed costs include fixed ownership requirements, fixed protection, short-term maintenance and long-term planning and inventory costs.

Cost, Operational

Costs associated with administering and maintaining National Forest facilities and resource programs. This includes appropriated funds only.

Cost, Variable

A cost that varies with the level of controlled outputs in the time horizon covered by the planning period or decisions being considered.

Council on Environmental Quality (CEQ)

An advisory council to the President established by the National Environmental Policy Act of 1969. It reviews Federal programs for their effect on the environment, conducts environmental studies, and advises the President on environmental matters.

Created Opening

Created openings are openings in the Forest created by the silvicultural practices of shelterwood regeneration cutting at the final harvest, clearcutting, seed tree cutting, or group selection cutting.

Critical Habitat

For threatened or endangered species, the specific areas within the geographical area occupied by the species (at the time it is listed, in accordance with provisions of Section 4 of the Endangered Species Act) on which are found those physical or biological features essential to the conservation of the species. This habitat may require special management considerations or protecting. Protection may also be required for additional habitat areas outside the geographical area occupied by the species at the time it is listed based upon a determination of the Secretary of the Interior that such areas are essential for the conservation of the species.

Critical Minerals

Minerals essential to the national defense, but whose procurement, while difficult in case of war, is less serious than those of Strategic Minerals.

Critical Window

A control point or area (such as a mountain pass) not included in an existing utility corridor but needed to retain future new utility corridor options.

Cubic Foot

A unit of measure with the dimensions of one foot x one foot x one foot.

Cull Tree

Trees of commercial species or commercial species of any size which are not now or/and will never be expected to contain more than 20% sound cubic feet of volume because of damage or defect.

Culmination of Mean Annual Increment (CMAI)

The point where the mean annual growth of a timber stand ceases to increase prior to decline. This is calculated by determining the cubic foot per acre volume of a stand of trees divided by the age of the stand.

Cultural Material

Actual objects removed from an historic or archaeological property as part of a data recovery program, including but not limited to, artifacts, by-products of human activity such as flakes or stone, fragments of bone, and organic waste of various kinds, architectural elements, soil samples, pollen analysis, skeletal material, and works of art.

Cultural Resources

The cultural foundation of our Nation includes the remains or records of districts, sites, areas, structures, buildings, networks, neighborhoods, memorials, objects and events from the past which have scientific, historic or cultural value. They may be historic, prehistoric, archaeological, or architectural in nature. Cultural resources are an irreplaceable and nonrenewable aspect of our national heritage.

Cumulative Effects

The combined effects of two or more management activities. The effects may be related to the number of individual activities, or to the number of repeated activities on the same piece of ground. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

D

Data Recovery

The systematic removal of the scientific, prehistoric, historic, and/or archaeological data that provide a cultural resource property with its research or information value.

Debris Slide

A shallow landslide of soil, rock, and organic material that occurs on steep slopes.

Debris Torrent

A large debris slide that is changed with water and confined to a steep stream channel. Debris torrents may travel several thousand feet.

Decision Criteria

Essentially the rules or standards used to evaluate alternatives. They are measurements or indicators that are designed to assist a decision maker in identifying a preferred choice from an array of possible alternatives.

Deferred Forest Land

Productive forest land that has been administratively identified for study as possible addition to the National Wilderness Preservation System, or otherwise withdrawn from timber utilization under authority granted in the Code of Federal Regulations.

Deferred - Rotation

Any grazing system which provides for a systematic rotation of the delay or discontinuance of livestock grazing on an area to provide for plant reproduction establishment or restoration of vigor.

Demand

The amount of output that users are willing to take at specific price, time period, and conditions of sale.

Departure

A schedule which deviates from the principle of nondeclining flow of timber harvest by exhibiting an increase in cutting levels above sustainable levels followed by a planned decrease in the timber sale and harvest schedule at some time in the future.

Designated Area (Air Quality)

Those areas delineated in the Oregon and Washington Smoke Management Plans as principal population centers of air quality concern.

Designated Wild and Scenic River

A river which is part of the National Wild and Scenic River system.

Desired Residue Profile

The desired level of both living and dead woody material that is desired by the land manager for a specific site or prescription. Residue includes slash materials remaining from timber harvest, living brush and trees, standing dead trees and snags, and vegetative litter on the forest floor.

Destination Locations

Those areas people commonly seek for camping or day use.

Destination Resort

A recreation resort designed for multi-day use in contrast to single day use.

Developed Recreation Site

Distinctly defined-designated- area where facilities are provided for concentrated public use; e.g. campgrounds, picnic areas, boating sites, and ski areas. (Maintenance Levels are defined below.)

Developed Recreation Site Maintenance Levels

Level I - Minimum Level. Operation and Maintainence of developed recreation sites at a level that only meets minimum requirements for public health and safety and does not maintain facilities over time. At this level no funding is provided for upgrading of facilities or completion of any portion of the backlog rehabilitation needs associated with developed sites.

Level II - Low Standard. Operation and Maintenance of developed recreation sites at the level necessary to maintain facilities over time and protect investments in facilities and to complete approximately 50% of the backlog rehabilitation needs associated with developed sites.

Level III - Standard Service Level. Operation and Maintenance of developed recreation sites at a level that will insure normal life expectancy of facilities and at a level that meets Forest service "Green Book" (i.e. Full Service) standards of maintenance, service, compliance and insures the experience level for which the site is designed and meets other aspects of administration as outlined in Forest Service manuals and regulations. At this level one hundred percent of any backlog rehabilitation needs associated with developed sites will be completed.

Diameter Breast High (DBH)

The diameter of a standing tree at a point 4 feet, 6 inches from ground level.

Discount Rate

An interest rate that represents the cost or time value of money in determining the present value of future costs and benefits.

Discount Rate, Real

A discount rate adjusted to exclude the effects of inflation.

Discounting

An adjustment, using a discount rate, for the value of money over time so that costs and benefits occurring in the future are reduced to a common time, usually the present, for comparison.

Dispersed Recreation

Outdoor recreation that takes place outside developed recreation sites or the Wilderness.

Diverse Cultured Groups

Groups of people with differing ethnic values, norms, social structures and heritage.

Diversity

The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource mangement plan. (36 CFR 219.3) See also Edge, Horizontal Diversity, and Vertical Diversity.

Domestic Water Source

A watershed which provides water for human consumption by an individual or individual that does not meet the criteria for a municipal watershed.

Drainage Pattern

The configuration or arrangement of stream drainage or other drainage patterns.

Duff

Organic matter in various stages of decomposition on the floor of the forest.

E

Earthflow - Deep (>100 ft.)

Rotational failure which occurs on gentle to moderate slopes.

High Risk - High potential for moss movement. Damage to facilities, loss of life or detrimental effects on fisheries or municipal water sources.

Moderate Risk - Moderate potential for movement. Less a risk of loss of life, damage to facilities or fisheries and municipal water sources encompass many acres.

Low Risk - Small in size. Little risk of loss of life, damage to facilities or fisheries and municipal water sources.

Ecosystem

An interacting system of organisms considered together with their environment; for example, marsh, watershed, and lake ecosystems.

Edge

The boundary between two or more elements of the environment; e.g. field and woodland.

Edge Contrast

A qualitative measure of the difference in structure of two adjacent vegetated areas; for example, low, medium, or high edge contrast.

Eligible Wild and Scenic River

Candidate river that is free flowing and contains at least one outstandingly remarkable value.

Effectiveness, Cost

Achieving specified outputs or objectives under given conditions for the least cost.

Effectiveness Index (Fire)

See Fire Management Efficiency Index.

Effects

Environmental consequences as a result of a proposed action. Included are direct effects, which are caused by the action and occur at the same time and place, and indirect effects, which are caused by the action and are later in time or further removed in distance, but which are still reasonably foreseeable. Indirect effects may include population growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

The terms "Effects" and "Impacts" as used in this statement are synonymous. Effects may be ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic quality, historic, cultural, economic, social, or health related, whether direct, indirect, or cumulative. Effects resulting from actions may have both beneficial and detrimental aspects, even if on balance the agency believes that the overall effects will be beneficial (40 CFR 1508.8).

Efficiency, Cost

The usefulness of specified inputs (costs) to produce specified outputs (benefits). In measuring cost efficiency, some outputs (such as environmental- mental, economic or social impacts) are not assigned monetary values but are achieved at specified levels in the least cost manner. Cost efficiency is usually measured using present net value, though use of benefit-cost ratios and rates-of-return may sometimes be appropriate.

Efficiency, Economic

The usefulness of inputs (costs) to produce outputs (benefits) and effects when all costs and benefits that can be identified and valued are included in the computations. Economic efficiency is usally measured using present net value, though use of benefit-cost ratios and rates-of-return may sometimes be appropriate.

Embeddedness

The degree to which larger particles on the stream bottom (boulders, rubble, or gravel) are surrounded or covered by fine sediment.

Endangered Species

Any species of animal or plant which is in danger of extinction throughout all or a significant portion of its range. Not included are members of the class Insects which have been determined by the Secretary to constitute a pest whose protection under the provisions of this Act (Endangered Species Act of 1973) would present an overwhelming and overriding risk to man. An endangered species must be designated in the Federal Register by the appropriate Federal Agency Secretary.

Endemic Plant

A plant confined to a certain country or region and with a comparatively restricted geographic distribution.

Energy Minerals

Minerals which produce energy. For example: oil, gas, geothermal, coal.

Enhancement

A short-term management practice which is done with the express purpose of increasing positive aspects of scenic variety where little variety now exists.

Environmental Analysis

An investigation and analysis of alternative actions and their predictable short- and -long-term environmental effects, incorporating the physical, biological economic, social, and cumulative effects. This process provides the information needed for identifying actions that may be categorically excluded or for preparing environmental documents as required.

Environmental Assessment

A concise public document required by the regulations implementing the National Environmental Policy Act.

Environmental Impact Statement (EIS) and Decision Documents Refers to a NEPA environmental assessment, environmental impact statement finding of no significant impact, decision notice, notice of intent or record of decision.

Ephemeral Stream or Drainage

A stream or portion of a stream that flows only in direct response to precipitation or snow melt. It receives little or no water from springs and no long-continued supply from snow or other sources. Ephemeral drainages frequently have no permanent or well-defined channels, but follow slight depressions in the natural contour of the ground surface.

Erodible

Susceptible to erosion.

Erosion

The wearing away or detachment of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitation creep.

Erosion (Accelerated)

Erosion much more rapid than normal, primarily as a result of the influence or the activities of man.

Erosion (Natural)

Wearing away of the earth's surface by water, ice, or other natural agents under natural environmental conditions of climate, vegetation, etc., undisturbed by human activity.

Escaped Fire

A fire which has exceeded, or is anticipated to exceed, preplanned initial action capabilities or the fire management direction

Escape Cover

Usually vegetation dense enough to hide an animal; used by animals to escape from potential enemies.

Essential Habitat

Areas designated by the Forest Service Regional Forester that possess the same characteristics of critical habitat as those designated by the Secretary of the Interior or Commerce.

Eutrophication

Well-nourished, and "eutrophication" refers to the natural or artificial addition of nutrients to bodies of water and to the effects of any resulting stimulation of algal growth.

Evapotranspiration

Loss of water from a land area through transpiration of plants and from the soil.

Even-Aged Management

The application of a combination of actions that results in the creation of forest stands composed of trees of essentially the same age. Managed even-aged forests are characterized by a distribution of stands of varying ages (and, therefore, tree sizes throughout the forest area). The difference in age between trees forming the main canopy level of a stand usually does not exceed 20 percent of the age of the stand at harvest rotation age. Regeneration in a particular stand is obtained in a short period at or near the time that a stand has reached the desired age or size for regeneration and is harvested. Clearcut, shelterwood, or seed tree cutting methods produce even-aged stands. (36 CFR 219.3)

Even-Flow

Maintaining a relatively constant supply of timber from decade to decade.

Exclusion Area

An area having a statutory prohibition to rights-of-way for linear facilities or corridor designation.

Expected Burned Acreage

The expected annual number of acres burned by fire size class and intensity level for a given program option or budget level. Expected burn acreage must equal or be less than the resource protection objective to be a valid option.

Extended Shelterwood

This is a variation of the shelterwood system design to provide for other resources such as wildlife or scenery considerations. The term extended is used to denote the retention of the old stand for a longer period than is necessary or in many cases desirable for maximum growth of the new stand.

F

Facility Maintenance Class

The rating system used in the Recreation Information Management System to classify the condition and maintenance needs of recreational sites and areas.

Fee Campground

A fee campground must have as a minimum all of the following: tent or trailer spaces, drinking water, access road, refuse containers, toilet facilities, personal fee collection, reasonable visitor protection, and simple devices for containing a campfire where permitted.

Fire Management Analysis Zone

The geographically delineated areas into which the planning unit is divided for the purpose of fire management analysis. The delineation is based upon common fire-behavior characteristics which is the "corner stone" for fire planning and evaluation of fire effects.

Fire Management Efficiency Index

An index based on the FFP cost (less proposed fuels investment 115), evaluated annual FFF and expected annual net value change for the selected option. These three variables become the targets for the purpose of monitoring plan performance over time. The expected plan performance is adjusted annually based on the actual budget level and actual seasonal index in the monitoring process.

Fire Management Direction

The direction provided by an interdisciplinary team for each separate management area on the Forest. It includes guides by management area for long-term maximum burn acreages, specifying fire size and intensity, which would not adversely affect attainment of resource targets or outputs. In addition, it provides guidelines on desired residue profiles and the use of fire to meet resource prescriptions.

Fire Prevention Levels

Level I-Low Level of Prevention Under this level public contact is incidental; with fire prevention mentioned secondary to other messages.

There is infrequent use of fire regulations. Prevention signing occurs only as part of other informational signing.

Level II-Moderate Level of Prevention Under this level fire prevention contacts are planned; but secondary to other activities. Messages are structured to deal with specific risks. Fire regulations are utilized seasonally with restrictions possible on a site specific basis. Signing is informational and directed at specific risks.

Level III-High Level of Prevention Under this level contacts are planned; and frequent messages are structural with the primary reason for the contact being the fire prevention message or the enforcement of restrictions. Fire restrictions are frequently used with fire regulations in effect during fire season. Signing is primarily directive or restrictive. Fire instructions are often the reason for the contact.

Fish Passage

Passage of fish up or downstream especially over stream obstructions.

Floodplain

The lowland and relatively flat area adjoining inland waters, including, at a minimum, that area subject to a one percent or greater chance of flooding in any given year.

Forage

All browse and non woody plants available to livestock or wildlife for grazing or harvestable for feed.

Forbs

Non-woody plants, other than grasses. Term refers to feed used by both wildlife and domesticated animals.

Forest Development Transportation Plan

The Forest Development Transportation Plan is the official description of the forest development transportation system and consists of a base map or series of base maps showing the location of each facility and an inventory record defining their characteristics. These documents shall also serve as the forest development road system plan referenced in the National Forest Management Act.

Foreground

A term used in visual (scenery) management to describe the stand of trees immediately adjacent to a high-value scenic area, recreation facility, or forest highway (see Background, Middleground).

Forest Interdisciplinary Team (I.D. Team)

A Team representing several disciplines to insure coordination of the various resources. Team functions include developing the Forest Plan, establishing the standards and requirements by which planning and management activities will be monitored and evaluated, and for completing the annual evaluation report and recommending amendments.

Forest Land

Land at least 10 percent occupied by forest trees of any size or formerly having had such cover and not currently developed for non-forest use. Lands developed for non-forest use include areas devoted to crops, improved pasture, residential or administrative areas, improved roads of any width and adjoining road clearing and power line clearing of any width. (36 CFR 219.3)

Forest Plan Amendment

Formal alteration of the Forest Plan by modification, deletion or addition based upon nonsignificant or significant changes. Non significant changes are minor modification of management direction. Significant changes are major alterations of specific management prescription direction or land use designations. Unlike a complete Plan revision; an amendment addresses only the issues that trigger a need for a change. Amendments must satisfy both NFMA and NEPA procedural requirements, including appropriate public notification.

Forest Plan Goal

A concise statement that describes a desired condition to be achieved sometime in the future. It is normally expressed in broad, general terms and is timeless in that it has no specific date by which it is to be completed. Goal statements form the principal basis from which objectives are developed (36 CFR).

Forest Plan Monitoring

Observing and determining whether Forest Management Direction is being implemented as stated in the Forest Plan.

Forest Plan Objective

A concise, time specific statement of measurable planned results responding to established goals. An objective forms the basis for further planning to define the precise steps to be taken and the resources to be used in achieving identified goals.

Forest and Rangeland Renewable Resources Planning Act (RPA) 1974

An act of Congress requiring the preparation of a program for the management of the National Forest's renewable resources and preparation of land and resource management plans for units of the National Forest System. It also requires a continuing inventory of all National Forest System lands and renewable resources.

Forestwide Standard

A principle requiring a specific level of attainment; a rule to measure against. The Forest-wide Standards apply to all areas of the Forest regardless of the other prescriptions applied.

FORPLAN

A linear programing system used for developing and analyzing Forest Planning Alternative.

Fuelbreak

Any natural or constructed barrier utilized to segregate, stop, or control the spread of fire.

Fuels

Combustible wildland vegetative materials. While usually applied to above ground living and dead surface vegetation, this definition also includes roots and organic soils such as peat.

Fuel Treatment

The rearrangement or disposal of natural or activity fuels (generated by management activity, such as slash left from logging) to reduce fire hazard. Fuels are defined as both living and dead vegetative materials consumable by fire.

G

Game

Wildlife that are hunted for sport and regulated by State Game regulations.

General Distribution

The geographic area presently occupied, often on a seasonal basis, by a species within the planning area. Distribution is not to be confused with present occupancy of specific habitat(s). Resource management activities will create changes in habitat which will force local shifts in occupancy.

Geologic Analysis

Analysis performed on the land using geologic techniques and knowledge, usually performed by a geologist.

Geothermal

Of or pertaining to the inherent heat of the earth. Geothermal steam is a leasable mineral.

Goal

A concise statement that describes a desired condition to be achieved sometime in the future. It is normally expressed in broad general terms and is timeless in that it has no specific date by which it is to be completed. Goal statements form the principle basis from which objectives are developed. (36 CFR 219.3)

Goods and Services

The various outputs, including on-site uses, produced from forest and rangeland resources. (36 CFR 219.3)

Gradient

Change of elevation, velocity, pressure or other characteristics per unit length.

Group Selection Cutting

Removal of tree groups ranging in size from a fraction of an acre up to about 2 acres in area that is smaller than the minimum feasible for even-aged management of a single stand.

Guideline

An indication or outline of policy or conduct that is not a mandatory requirement (as opposed to a standard, which is mandatory.

H

Habitat

The place where a plant or animal naturally or normally lives and grows.

Habitat Component

A simple part, or a relatively complex entity, regarded as a part of an area or environment in which an organism or biological population normally lives.

Habitat Capability

The estimated ability of an area, given existing or predicted habitat conditions, to support a wildlife, fish or plant population. It is measured in terms of potential population numbers.

Habitat Diversity Index

A measure of habitat diversity improvement expressed as a percentage of optimum size class distribution that is achieved over time.

Hardwood

A broad-leaved flowering tree.

Harvest Cutting Method

A combination of interrelated actions whereby forests are tended, harvested, and replaced. The combination of management practices used to manipulate the vegetation in forests. Harvest cutting methods are classified as even-aged and uneven-aged.

Heaving

The partial lifting of plants out of the ground, frequently breaking their roots, as a result of freezing and thawing of the surface soil during the winter.

Hiding Cover

Vegetation capable of hiding 90 percent of a standing deer or elk from the view of a human at a distance of 200 feet.

High Standard

Maintaining recreational facilities to the fullest and best standard. High standard includes regular garbage pickup and frequent cleaning of facilities.

High Quality Habitat

Habitat which completely satisfies a species existence requirement.

History

People, places, things and events which have occurred or pertain to the time of written record. For the Pacific Northwest, the history of written documentation is approximately 1600 AD.

Horizontal Diversity

The distribution and abundance of plant and animal communities or successional stages across an area of land; the greater the number of communities, the higher the degree of horizontal diversity. This concept is close to, but not exactly the same as, "even-aged management," although each may influence the other. Application of even-aged management, for example, can be designed to accomplish horizontal diversity objectives. See also Vertical Diversity.

Human Resource Programs

Providing human and natural resource benefits through administering and hosting programs in work, training, and education for the unemployed, the underemployed, the elderly, the young and others with special needs.

Hundred Year Flood

Severe flood which, statistically, has a chance of occuring once in a hundred years, or has a 1% chance of occurring each year.

Hydrology

The scientific study of the properties, distribution, and effects of water in the atmosphere, on the earth's surface, and in soil and rocks.

Hyphoreic Zone

The subterranean areas below and adjacent to stream channels, which contain a complex community of small animals (i.e. insects and crustaceans) living in the gravels.

I

Impact, Economic

The change, positive or negative, in economic conditions, including distribution and stability of employment and income in affected local, regional, and national economies, which directly or indirectly results from an activity, project, or program.

Indian Tribe

The governing body of any Indian tribe, band, nation, or other group which is recognized as an Indian tribe by the Secretary of the Interior for which the United States holds land in trust or restricted status for the entity of its members. Such term also includes any Native village corporation, regional corporation, and Native group established pursuant to the Alaska Native Claims Settlement Act (36 CFR 800.2(g)).

Indicator Species

A wildlife management scheme in which the welfare of a selected species is presumed to indicate the welfare of other species.

Indicator Species Management

A wildlife management strategy to produce relatively high numbers of selected wildlife species in particular places for particular purposes.

Individual (single) Tree Selection

See Uneven-aged Silvicultural Systems.

Industrial Camping

Camps, cabins, or residences to house personnel employed in road construction, tree planting, logging, or other industries including prison camps. These uses range from seasonal or temporary to permanent; the occupation may be full or part-time.

Initial Action

The prompt, preplanned response to a wildfire.

Infiltration

The movement of water into the soil through pores or other openings.

Instream Flows

A prescribed level (or levels) of streamflow, usually expressed as a stipulation in a permit authorizing a dam or water diversion, for the purpose of meeting National Forest System management objectives.

Integrated Resource Management Approach

All resources are planned in the same area and scheduled over the next decade using an interdisciplinary approach. All further Forest Plan implementation actions are united and coordinated to achieve Forest Plan goals and objectives.

Interdisciplinary Approach

Utilize a team representing several disciplines to coordinate and integrate planning actions consistent with the principles of Multiple Use Sustained Yield Act.

Integrated Land and Resource Management Plan

A Forest Plan which considers all lands and all resources of the National Forest, in contrast to consideration of only part of the Forest's lands or just one of the resources.

Integrated Pest Management

A process for selecting stategies to regulate forest pests in which all aspects of a pest-host system are studied and weighed. The information considered in selecting appropriate strategies includes the impact of the unregulated pest population on various resources values, alternative regulatory tactics and strategies, and benefit/cost estimates for these alternative strategies. Regulatory strategies are based on sound silvicultural practices and ecology of the pest-host system and consist of a combination of tactics such as timber stand improvement plus selective use of pesticides. A basic principle in the choice of strategy is that it be ecologically compatible or acceptable. (36 CFR 219.3)

Intensive Forest Management

A high investment level of timber management that envisions initial harvest, regeneration with genetically improved seedling stock, control of competing vegetation, fill-in planting, precommercial thinning as needed for stocking control, one or more commercial thinning, and final harvest.

Interdisciplinary Team

A team of people that collectively represent several disciplines and whose duty it is to coordinate and integrate the planning activities. See also Forest Interdisciplinary Team (I.D. Team).

Intermittent Stream

A stream that flows above ground at intervals or only flows periodically during the year. In contrast to ephemeral drainages (see definition), intermittent streams generally have well-defined channels.

Inventoried Roadless Area

Areas of undeveloped Federal land, greater than 5,000 acres in size, within which there are no improved roads maintained for travel by means of motorized vehicles intended for highway use. Exceptions are those areas less than 5,000 acres manageable in their natural condition, contiguous to existing wilderness, or are of issue to the public.

Inventory

Strategies designed to collect existing information and locate cultural resources in a specific area, such as through field survey, records search, oral interviews, and archival study.

Irretrievable

Applies to losses of production, harvest, or use of renewable natural resources. For example, some or all of the timber production from an area is irretrievably lost during the time an area is used as a winter sports site. If the use is changed, timber production can be resumed. The production lost is irretrievable, but the action is not irreversible.

Irreversible

Applies primarily to the use of nonrenewable resources, such as minerals or cultural resources, or to those factors, such as soil productivity, that are renewable only over long time periods. Irreversible also includes loss of future options.

Issue

A point, matter, or question of public discussion or interest to be addressed or decided through the planning process.

K

Key Interest Areas

Any interesting feature or condition in an area that attracts people. For example, a waterfall along a trail or road, a scenic overlook or a wildlife viewing area.

Key Site Riparian Areas

Large riparian areas exhibiting high habitat diversity and outstanding capabilities for producing high quality water, excellent fish spawning and rearing habitat, high quality waterfowl breeding, nesting and resting habitat, wildlife cover and diverse plant communities.

Knutson-Vandenberg Act

Legislation authorizing the collection of money from timber sale receipts for reforestation, stand improvements, and other resource improvement or mitigation projects on timber sale areas.

Kuchler Vegetative Types

Potential natural vegetation of the contiguous United States, classified by A. W. Kuchler.

K-V

An abbreviation for Knutson-Vandenberg.

L

Land Allocation

The assignment of a management emphasis to particular land areas with the purpose of achieving the goals and objectives of that alternative.

Landings

Those designated areas within a timber sale where logs are temporarily stored before transport to a mill.

Landslide

The group of slope movements wherein shear failure occurs along a specific surface or combination of surfaces.

Debris Flow. General designation for all types of rapid flowage involving debris of various kinds of conditions.

Debris Slide. A shallow landslide of soil, rock, and organic material that occurs on steep slopes.

Earthflow. A mass movement process and landform characterized by a downslope flow of earth and weathered rock. Slopes are usually 30% or less, rate of movement is imperceptible to slow, depth is variable, area can be several acres to several miles in size.

Slump. Downward slipping of a mass of material moving as a unit or several subsidiary units usually with a backward rotation.

Large Woody Debris

Logs, tree boles, and root wads greater than 4 inches in diameter.

Leasable Minerals

All minerals except salable minerals on acquired lands. All minerals on Outer Continental shelf. Coal; phosphate; oil; gas; chlorides, sulfates, carbonates, borates, silicates or nitrates of potassium and sodium; native asphalt, solid and semi-solid bitumen and bitumenous rock including oil-impregnated rock or sands from which oil is recoverable only by special treatment after the deposit is mined Geothermal resources.

Legal Trout

A trout six inches or longer is legal by registration in the State of Oregon.

Life Form

How a species makes its living, also called a niche.

Limiting Habitat

Habitat which completely satisfies existence requirements.

Limits of Acceptable Change (LAC)

Maximum limit of human-caused change allowed in wilderness. Each WRS Class has a set of limits which presupposes that certain areas of wilderness (trails) will be allowed to receive higher levels of use than other areas (trailless), and thus will receive more change or resource impact. LAC's are not a management objective, but a maximum limit.

Litter

The uppermost layer of organic debris on the ground under a vegetation cover, i.e. essentially the freshly fallen or only slightly decomposed vegetable material, mainly from foliage but also bark fragments, twigs, flowers, fruits, etc.

Livestock Management Strategies

Strategy B - Environmental Management with Livestock - Livestock use is within the apparent present capacity of the range environment. Investments for range management are applied only to the extent required to maintain the environment at a stewardship level in the presence of grazing. Investments for implementation may be very low for some resource classes. Resource impacts resulting from past use is charged to benefiting or stewardship functions. The goal for the strategy is to attain livestock control. No attempt is made to achieve livestock distribution (i.e. animal structural improvements).

Strategy C - Extensive Management of Environment and Livestock - Management systems and techniques, including fencing and water developments, are applied as needed to obtain relatively uniform livestock distribution and plant use, and to maintain plant vigor. Management seeks full utilization of the animal unit months available for livestock grazing. No attempt is made to maximize livestock forage production by silvicultural practices such as seeding. On the Mt. Hood National Forest, Management Level C will be proper classification of allotments where an attempt is made (or planned) to realize benefits from the full productive potential of native vegetation occurring in the area. This would include all structural improvements of the allotment.

Strategy D - Intensive Management of Environment and Livestock - All available technology for range and livestock management is considered. Management seeks to maximize livestock forage production consistent with constraints of maintaining the environment and providing for multiple use. Existing vegetation may be replaced through improvement in growing conditions. Structures may be installed to accommodate complex livestock management systems and practices. Advanced livestock management practices are commonplace. Management toward this end means and attempts are made at maximizing livestock forage production through improvement developments up to and including range revegetation.

Range revegetation includes forage seeding, prescribed burning, and other silvicultural treatments where the primary purpose of the action is to increase forage for domestic livestock production.

Local Roads

Connect terminal facilities such as log landings and recreation sites, with forest collector roads, forest arterial roads, or public highways. Location and standards are determined by the specific resource needs that the roads serve.

Locatable Minerals

Those hardrock minerals which can be obtained by filing a claim on Public Domain or National Forest System lands reserved from the Public Domain. In general, the locatable minerals are those hardrock minerals which are mined and processed for the recovery of metals, but may also include certain nonmetallic minerals and uncommon varieties of mineral materials.

Long-Term Sustained Yield Timber Capacity

The highest uniform wood yield from lands being managed for timber production that may be sustained under a specified management intensity consistent with multiple-use objectives. (36 CFR 219.3)

Low Standard

Maintaining recreational facilities to the point that health and safety of the public is the only concern. Services are minimal.

M

M

Thousand

Maintenance Levels 1-5

Level 1. This level is assigned to intermittent service roads during the time management direction requires that the road be closed to motorized traffic.

Level 2. This level is assigned where management direction requires that the road be open for limited passage of traffic. Roads in this maintenance level are intended for use by high clearance vehicles and not maintained passenger car traffic.

Level 3. This level is assigned where management direction requires that the road be open and maintained for safe travel by a prudent driver in a standard four wheel passenger car.

Level 4. This level is assigned where management direction requires the road to provide a moderate degree of user comfort and convenience at moderate travel speeds. Traffic volumes are normally sufficient to require a double lane aggregate surfaced road. Paved surfaces are often used.

Level 5. This level is assigned where management direction requires the road to provide a high degree of user comfort and convenience. These roads are normally double lane, paved facilities.

Management Area

An area with similar management objectives and a common management prescription. In Region 6, a management area is the contiguous area assigned to a specific management strategy (the management strategy then becomes the management prescription).

Management Concern

An issue, problem, or a condition which constrains the range of management practices identified by the Forest Service in the planning process. (36 CFR 219.3)

Management Direction

A statement of multiple-use and other goals and objectives, the associated management prescriptions, and standards and guidelines for attaining them. (36 CFR 219.3)

Management Intensity

A management practice or combination of management practices and associated costs designed to obtain different levels of goods and services. (36 CFR 219.3)

Management Practice

A specific activity, measure, course of action, or treatment. (36 CFR 219.3)

Management Prescription

Management practices and intensity of management selected and scheduled for application on a specific area to attain multiple-use and other goals and objectives. (36 CFR 219.3)

Market Resources

Products derived from renewable and nonrenewable resources that have a well-established market value; for example, forage, timber, water, and minerals.

Mass Movement

Downslope, unit movement of a portion of the land's surface; i.e. a single landslide or the gradual simultaneous, downhill movement of the whole mass of loose earth material on a slope face.

Mature Timber

Trees that have attained full development, particularly in height, and are in full seed production.

Maximum Modification

A visual quality objective meaning man's activity may dominate the characteristic landscape but should appear as a natural occurrence when viewed as background.

MBF

Thousand board feet. A measure of wood volume.

MCF

Thousand cubic feet. A measure of wood volume.

Mean Annual Increment of Growth

The total increase in girth, diameter, basal area, height, or volume of individual trees or a stand up to a given age, divided by that age.

Middleground

The visible terrain beyond the foreground where individual trees are still visible but do not stand out distinctly from the stand.

Mineral Entry

The filing of a mining claim upon public domain or related land to obtain the right to any minerals it may contain.

Mineral Entry Withdrawal

The exclusion of mining locations and mineral development work on areas required for administrative sites by the Forest Service and other areas highly valued by the public.

Mineral Materials

Deposits such as sand, stone, gravel, and clay.

Mineral Potential

A rating system for mineral resources based on the degree to which certain criteria indicates favorable potential for development of mineral resources.

High Mineral-Resource Potential. Exists where geologic, geochemical and/or geophysical characteristics favorable for mineral accumulations are known to be present, or where geophysical characteristics strongly support the possibility of mineral accumulation, and evidence shows that mineralization has occurred. This rating covers existing mineral producting areas and known "Mining Districts".

Moderate Mineral-Resource Potential. Exists where geologic, geochemical and/or geophysical characteristics can reasonably be interpreted to be present, but where evidence of mineralization has not yet been found.

Low Mineral-Resource Potential. This rating is assigned to areas where geologic, geochemical and/or geophysical characteristics are unfavorable, or where evidence indicates that mineral concentrations are unlikely. This rating also covers areas with obvious but dispersed and apparently uneconomical mineral occurances.

Unknown Mineral-Resource Potential. This rating is used for areas where the level of knowledge of the mineral resource is so inadequate that a classification would be unjustified.

Mineral Withdrawal

The exclusion of locatable mineral deposits from mineral entry on areas required for administrative sites by the Forest Service and other areas highly valued by the public. Public lands withdrawn from entry under the General Mining Laws and/or the Mineral Leasing Laws.

Minimum Management Requirements (MMRs)

Requirements on forest management mandated by the Regional Office intended to minimally protect resources such as riparian areas and sensitive species of wildlife.

Minimum Viable Population

The lowest population which has adequate numbers and dispersion of reproductive individuals to ensure the continued existence of the species population on the planning area.

Mining Claims

That portion of the public estate held by law for mining purposes in which the right of exclusive possession of locatable mineral deposits is vested to the locator of a deposit.

Mitigation

Actions to avoid, minimize, reduce, eliminate, or rectify the impact of a management practice.

MM

Million.

MMBF

Million board feet.

MMCF

Million cubic feet.

Monitoring

A process to collect significant data from defined sources to identify departures or deviations from expected plan outputs.

Modification

A visual quality objective meaning man's activity may dominate the characteristic landscape but must, at the same time, utilize natural established form, line, color, and texture. It should appear as a natural occurrence when viewed in foreground or middleground.

Multilayered Canopy

A stand of trees with two or more distinct tree layers in the canopy.

Multiple Use

The management of all the various renewable surface resources of the National Forests so that they are utilized in the combination that will best meet the needs of the American people. The concept also includes making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in the use to conform to changing needs and conditions. Some lands will be used for less than all of the resources. There will be harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land. Consideration will be given to the relative values of the various resources, and management will not necessarily favor the combination of uses that will give the greatest dollar return or the greatest unit output.

Multidisciplinary Approach

An approach whereby one of more disciplines representing a unique value or resource provides input to an I.D. Team or to management.

Municipal Supply Watershed

A watershed that provides water for human consumption where Forest Service management could have a significant effect upon the quality of water at the point of intake. The watershed must provide water utilized by a community or any other public water system regularly serving 25 individuals at least 60 days out of the year or provide at least 15 service connections.

N

National Environmental Policy Act (NEPA) (1969)

An Act, to declare a National policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the nation; and to establish a Council on Environmental Quality.

National Forest Management Act (NFMA)

An Act passed in 1976 amending the Forest and Rangeland Renewable Resources Planning Act. NFMA requires the prepartion of Regional and Forest Plans and the preparation of regulations to guide that development.

National Forest Systems

All National Forest lands reserved or withdrawn from the public domain of the United States, all National Forest lands acquired through purchase, exchange, donation, or other means, the National Grasslands and land utilization projects administered under Title III of the Bankhead-Jones

Farm Tenant Act (50 Stat. 525, 7 U.S.C. 1010-1012), and other lands, waters or interests therein which are administered by the Forest Service or are designated for administration through the Forest Service as a part of the system. (16 U.S.C. 1608)

National Register "Criteria of Significance"

The criteria established for use in evaluating whether properties qualify for listing in the National Register of Historic Places. These criteria refer to the quality of significance in American history, architecture, archaeology, and culture which exists in districts, sites, buildings, structures, and objects of National, State and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and association.

National Register - Eligible Property

A property that has been determined eligible for National Register listing by the Secretary of the Interior, or one that has not yet gone through the formal eligibility-determination process but meets the National Register criteria. For management purposes, an "eligible" property is treated as if it were already listed.

National Registry of Natural Landmarks

National inventory and listing of all or part of recreation areas classified under 36 CFR 294.1 and research natural areas classified under 36 CFR 251.23 which have values illustrating the ecological or geological character of the Nation.

Natural Forest

The condition of a forest environment at any point in time including its associated plant and animal communities, which has been reached essentially through the process of natural succession. This process would include the effects of natural catastrophic occurrences.

NDF

An abbreviation of Non-Declining Flow.

NEPA

An abbreviation of National Environmental Policy Act.

Net Public Benefits

An expression used to signify the overall long-term value to the nation of all outputs and positive effects (benefits) less all associated inputs and negative effects (costs) whether they can be quantitatively valued or not. Net public benefits are measured by both quantitative and qualitative criteria rather than a single measure or index. The maximization of net public benefits to be derived from management of the units of the National Forest System is consistent with the principles of multiple-use and sustained-yield. (36 CFR 219.3)

Net Value Change

The estimation process carried out by an interdisciplinary team to assess positive and negative effects of individual resource allocation or management area designation. An estimation of physical effects and economic consequences of various fire intensity levels.

NFMA

An abbreviation of the National Forest Management Act of 1976.

Non-Chargeable Timber Harvest

Timber harvest that is not chargeable to the allowable sale quantity.

Non-Declining Flow (NDF)

A level of timber production assigned so that the planned timber sale and harvest for any future decade is equal to or greater than the planned sale and harvest for the preceding decade.

Non-Game

Any species of wildlife or fish which is not managed or otherwise controlled by hunting, fishing, or trapping regulations.

Non-Market

Products derived from National Forest resources that do not have a well-established market value, for example, recreation, wilderness, wildlife.

Non-Point

Refers to area sources of water pollution such as a watershed in contrast to a point source such as an outlet from a factory.

Non-Traditional Groups

Group of people which have not historically used the Forest or been involved in its management.

Noxious Weeds

A plant considered to be extremely destructive or harmful to agriculture and designated by law. An undesirable species that conflicts with, restricts, or otherwise causes problems with the management objectives.

NPB

An abbreviation of net public benefits.

O

Objective

A concise, time-specific statement of measurable planned results that respond to pre-established goals. An objective forms the basis for further planning to define the precise steps to be taken and the resources to be used in achieving identified goals. (36 CFR 219.3)

Occupancy Trespass

The illegal occupation or possession of National Forest land or property.

Off-Road Vehicle (ORV)

Any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, snow, ice, or other natural terrain. Non-motorized Mountain Bicycle use is also considered an Off-Road Vehicle.

Old Growth Stand

An old-growth stand is defined as any stand of trees 10 acres or greater generally containing the following characteristics: 1) stands contain mature and overmature trees in the overstory and are well into the mature growth stage; 2) stands will usually contain a multilayered canopy and trees of several age classes; 3) standing dead trees and down material are present; and 4) evidence of human activity may be present but does not significantly alter the other characteristics and would be a subordinate factor in a description of such a stand.

For additional information on how old growth was defined on the Mt. Hood National Forest, see FEIS-Chapter 3.

Oligotrophic

Lakes having low nutrient supplies which are poor producers of organic matter.

Opportunity Cost

The value of benefits forgone from an alternative.

Optimum Density

For wildlife, the maximum rate of animal stocking possible without inducing damage to vegetation or related resources, may vary from year to year because of environmental and/or population factors.

ORV

An abbreviation for off-road vehicles.

Other Native American

This term refers to American Indians, including Carib and Arawak, Eskimo and Aleut, and Native Micronesians and Polynesians, who are identified by themselves and recognized by others as members of a named cultural group that historically has shared linguistic, cultural, social, and other characteristics, but that is not necessarily an Indian tribe as defined above.

Output

A good, service, or on-site use that is produced from forest and rangeland resources. See FSH 1309.11 for forest and rangeland outputs, codes and units of measure. Examples: X06 - Softwood Sawtimber production - MCF; X80 - Increased Water Yield - Acre feet; W01 - Primitive Recreation Use - RVDs

Outreach

The efforts the agency makes to inform members and groups within the community of opportunities offered by the Forest including contract, volunteer, foraging or gathering, employment, and recreation opportunities.

Outstandingly Remarkable Values

River related resource value that is rare, unique or exemplary. The value is significant at a Regional or National level.

Overstory

That portion of the trees in a forest of more than one story, forming the upper or uppermost canopy layer.

P

PAOT

Persons-At-One-Time - Public recreational measurement term. The number of people in an area or using a facility at one time.

PARS

The burned acreage and fire occurrence guidelines which represent the annual average long-term fire loss. PARS are expressed by size class and fire intensity levels.

Partial Retention

A visual quality objective where man's activities may be evident but subordinate to the characteristic landscape.

Particulates

A component of polluted air consisting of any liquid or solid particles suspended or falling through the atmosphere.

Patented Mining Claims

A patent is a document which conveys a title. Public law provides that when patented, a mining claim becomes private property and is land over which the United States has no property rights, except as may be reserved in the patent. After a mining claim is patented, the owner does not have to comply with requirements of the General Federal Mining law, but is required to meet State regulations.

Payment in Lieu of Taxes

Payments to local or State governments based on ownership of Federal land and not directly dependent on production of outputs or receipt sharing. Specifically, they include payments made under the Payments in Lieu of Taxes Act of 1976, P.L. 94-565 Stat. 2662; 31 U.S.C 1601-1607 (Note these payments are in addition to payments made from gross receipts from forest products made under the Twenty-Five Percent Fund Act of May 1908).

Peak Discharge, Peak Flow

The maximum volume of flow attained at a given point in a stream during a runoff event.

Percolation

The downward movement of water within or through the soil, especially the downward flow of water in saturated or nearly saturated soil.

Perennial Stream

A stream that flows throughout the year.

Permanent Road Closure

Roads closed with the intent to never use them again, action taken to make them impassable and remove them from the transportation system.

Personal Use Firewood

Firewood gathered for use by the woodcutter. Resale of personal use firewood is not allowed.

Persons-at-one-time (PAOT)

A recreation capacity measurement term indicating the number of people that can use a facility or area at one time.

Physically Challenged Individuals

Persons with physical conditions that require specialized access or equipment needed to assist them in walking, seeing, hearing, learning or lifting.

Planning Area

The area of the National Forest System covered by a regional guide or Forest Plan. (36 CFR 219.3)

Planning Horizon

The overall time period considered in the planning process that spans all activities covered in the analysis or plan and all future conditions and effects of proposed actions which would influence the planning decisions. (36 CFR 219.3)

Planning Period

One decade. The time interval within the planning horizon that is used to show incremental changes in yields, costs, effects, and benefits. (36 CFR 219.3

Plant Communities

A vegetation complex unique in its combination of plants which occur in particular locations under particular influences. A plant community is a reflection of integrated environmental influences on the site - such as soils, temperature, elevation, solar radiation, slope, aspect, and rainfall.

PNV

An abbreviation of present net value.

PNW-447

Pacific Northwest Research Note 447 of July 1986.

Pool Habitat

That portion of the stream with reduced current velocity, often with water deeper than the surrounding areas, and which is frequently usable by fish for resting and cover.

Pool Tailouts

That portion of the pool that is downstream of the deepest part of the pool as the pool becomes shallower and before it becomes a riffle.

Potential Yield

The sustainable output of wood fiber available after the needs of other forest uses have been deducted from the Biological Potential.

Practices

Those management activities that are proposed or expected to occur.

Precommercial Thinning

The selective felling or removal of trees in a young stand, primarily to accelerate diameter increment on the remaining stems, maintain a specific stocking or stand density range, and improve the vigor and quality of the trees that remain.

Prehistory

People, places, things and events which have occurred or pertain to the time before written record.

Prescribed Fire

A wildland fire burning under specified conditions which will accomplish certain planned objectives. The fire may result from either planned or unplanned ignitions. Proposals for use of unplanned ignitions for this purpose must be approved by the Regional Forester.

Prescribed Natural Fire

The use of unplanned natural ignitions to meet management prescriptions.

Present Net Value (PNV)

The difference between the discounted values (benefits) of all outputs to which monetary values or established market prices are assigned, and the total discounted costs of managing the planning area. (36 CFR 219.3) In Forest Planning; monetary values were assigned to timber stumpage, recreation visitor days (RVDs), wildlife/fish related recreation visitor days (WFVDs), grazing use and mineral outputs.

Preservation

A visual quality objective that allows only ecological changes to take place.

Presuppression

Activities required in advance of fire occurrence to ensure an effective suppression action. It includes (1) recruiting and training fire forces, (2) planning and organizing attack methods, (3) procuring and maintaining fire equipment, and (4) maintaining structural improvements necessary for the fire program.

Price

The unit value of an output expressed in dollars.

Primary Recreational Use Season

The seasonal period of time when an area is most commonly used. For example, the primary recreational use seasons for the Mt. Hood climbing routes are generally March through May, and July through August or September.

Primitive Recreation

Those recreation activities which occur in areas characterized by an essentially unmodified natural environment of fairly large size (2,500 acres or greater).

Production Potential

The capability of the land or water to produce a given resource.

Productive Forest Lands

Forest lands that are capable of producing crops of industrial wood and have not been reserved or deferred from timber management.

Program Development and Budgeting

The process by which forest management activities are proposed and funded.

Program Element

An individual Forest Service area of responsibility, which in combination with other elements, comprises the statutory or Executive directed mission of the Forest Service. Specific Forest Service program elements are defined in the Management Information Handbook (FSH 1309.11).

Programmed Harvest

The part of the potential timber yield that is scheduled for harvesting. Includes salvage and cull timber volumes. It is based on current demand, funding, and multiple use considerations.

Public Access

Usually refers to a road or trail route over which a public agency claims a right-of-way for public use.

Public Issue

A subject or question of widespread public interest relating to management of the National Forest System. (36 CFR 219.3)

Purchaser Road Credit

Credit earned by the purchaser of a National Forest timber sale in return for construction of contract-specified roads. Earned purchaser credit may be used by the purchaser as payment for National Forest timber removed.

R

Radio Telemetry

A radio signal that is used to measure the position and/or movement of a wild animal. The radio transmitter is attached to the animal, and a receiver is used by a researcher to locate the animal in its natural habitat.

Range

Satisfactory Condition - On suitable range, forage condition is at least fair, with stable trend, and allotment is not classified PC (basic resource damage) or PD (other resource damage).

PC (Basic Resource Damage) - Allotments will be classified as PC when analysis or evaluation indicates that one or more of the following conditions exist and livestock use on the allotment is or has been a major factor contributing to this condition.

a. Maximum summer water temperatures are elevated above State standards or other approved criteria on SMU class I or II streams and this is largely due to the loss of shade-producing vegetation in the allotment.

Range Allotment

A designated area containing land suitable and available for livestock grazing use upon which a specified number and kind of livestock are grazed under an approved allotment management plan. It is the basic management unit of the range resource on National Forest System lands administered by the Forest Service.

Range Allotment Plan

A long term operating plan for a growing allotment designed to reach a given set of objectives and meet forest plan standards and guidelines. It is prepared with input from the permittee.

Ranger District

An administrative subdivision of the Forest, supervised by a District Ranger who reports to the Forest Supervisor.

Raptors

Any predatory bird - such as a falcon, hawk, eagle or owl - that has feet with sharp talons or claws adapted for seizing prey and a hooked beak for tearing flesh.

Rare II

An abbreviation of Roadless Area Review and Evaluation II. Rare II was an extension of the Rare I process to inventory and map all roadless areas remaining on National Forests Lands.

Real Dollar Value

A monetary value that compensates for the effects of inflation. (36 CFR 219.3)

Recreation Information Management (RIM)

The Forest Service system for recording recreation facility condition and use.

Recreation Opportunity

An opportunity for a user to participate in a preferred activity within a preferred setting, in order to realize those satisfying experiences which are desired.

Recreation Opportunity Spectrum (ROS)

Land delineations that identify a variety of recreation experience opportunities categorized into six classes on a continuum from primitive to urban. Each class is defined in terms of the degree to which it satisfies certain recreation experience needs. This is measured based on the extent to which the natural environment has been modified, the type of facilities provided, the degree of outdoor skills needed to enjoy the area, and the relative density of recreation use. The seven classes are:

Primitive. Area is characterized by an essentially unmodified natural environment of fairly large size. Interaction between users is very low, and evidence of other users is minimal. The area is managed to be essentially free from evidence of management restrictions and controls. Motorized use within the area is not permitted.

Semiprimitive Nonmotorized. Area is characterized by a predominantly natural or natural-appearing environment of moderate to large size. Interaction between users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but subtle. Motorized recreation use is not permitted, but local roads used for other resource management activities may be present on a limited basis. Use of such roads is restricted to minimize impacts on recreational experience opportunities.

Semiprimitive Motorized. Area is characterized by a predominantly natural or natural-appearing environment of moderate to large size. Concentration of users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but subtle. Motorized recreation use of local primitive or collector roads with predominantly natural surfaces and trails suitable for motor bikes is permitted.

Roaded Modified. A subclass of the Roaded Natural ROS class. Involves areas that are characterized by predominantly natural appearing environments with high evidence of the sights and sounds of humans. Such evidence may not harmonize with the natural environment. Interaction between users may be moderate to high, with evidence of other users prevalent. Resource modification and utilization practices are evident and may not harmonize with the natural environment. Conventional motorized use is allowed and incorporated into construction standards and design of facilities.

Roaded Natural. Area is characterized by predominantly natural-appearing environments with moderate evidence of the sights and sounds of man. Such evidence usually harmonizes with the natural environment. Interaction between users may be moderate to high, and evidence of other users prevalent. Resource modification and utilization practices are evident but harmonize with the natural environment. Conventional motorized use is allowed and incorporated into construction standards and design of facilities.

Rural. Area is characterized by a natural environment that has been substantially modified by development of structures, vegetative manipulation, or pastoral agricultural development. Resource modification and utilization practices may be used to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sounds of humans are readily evident, and the interaction between users is often moderate to high. A considerable number of facilities are designed for use by a large number of people. Facilities are often provided for special activities. Moderate user densities are present away from developed sites. Facilities for intensified motorized use and parking are available.

Urban. Area is characterized by a substantially urbanized environment, although the background may have natural-appearing elements. Renewable resource modification and utilization practices are often used to enhance specific recreation activities. Vegetative cover is often exotic and manicured. Sights and sounds of humans are predominant on site and in nearby areas. Facilities for highly intensified motor use and parking are available with forms of mass transit often available to carry people throughout the site.

Recreation Visitor Day (RVD)

A unit for measuring recreation use, with 12 visitor hours in a visitor day. This may consist of one person for 12 hours, 12 persons for one hour, or any equivalent combination of continuous or intermittent recreation use by individuals or groups.

Recreational Mining

A leisure-time activity involving the search for and collection of mineral specimens using nonsurface disturbing methods.

Reforestation

The natural or artificial restocking of an area with forest trees; most commonly used in reference to artificial restocking.

Regeneration

The actual seedlings and saplings existing in a stand; or the act of establishing young trees naturally or artificially.

Regeneration Cut

Any removal of trees to make regeneration possible.

Region

An area covered by a Regional guide. See FSM 1221.3 for organizational definitions.

Regional Forester

The official responsible for administering a single Forest Service region.

Regulated Harvest

Harvest that contributes chargeable timber volume to the Allowable Sale Quantity.

Regulated Volume

Same as Allowable Sale Quantity.

Rehabilitation

A short-term management alternative used to return existing visual impacts in the natural landscape to a desired visual quality.

Release

Freeing a tree or group of trees from competition by cutting or otherwise eliminating vegetation that is overtopping or closely surrounding them.

Removal Cut (Final Cut)

The removal of the last seed bearing or shelter trees after regeneration is established under a shelterwood method.

Representative Fires

The grouping of fires to allow the evaluation of planned initial action fire fighting forces. The grouping of fire occurrence into representative fires is based on the differences in dispatch response or resource mix within a Fire Management Analysis Zone (FMAZ).

Research Natural Area

An area of land in as near a natural condition as possible that exemplifies typical or unique vegetation and associated biotic, soil, geologic, and aquatic features. The area is set aside to preserve a representative sample of an ecological community primarily for non-manipulative scientific and education purposes.

Reserved Forest Land

Productive public forest land withdrawn from timber utilization through statute or administrative regulations.

Resident Trout

A trout which spends its entire life in fresh water.

Residual Stand

The trees remaining standing after some form of selection cutting is performed on a stand.

Residue

Material which includes both desired and unwanted vegetative residues which result from an activity or natural event.

Resource Protection Objective

A specified statement of measurable results to be achieved within a stated time period. The Fire Management direction established by the Interdisciplinary Team for maximum burn acreage and fire size.

Responsible Line Officer

For land management planning purposes, the Forest Service employee who has been delegated the authority to carry out a specific planning action. (36 CFR 219.3)

Rest-Rotation

A system of grazing mangement which defines systematically recurring periods of grazing and deferment for two or more pastures or management units.

Retention

A visual quality objective where human activities are not evident to the casual forest visitor.

Riffle

A feature of a stream having swift-flowing, turbulent water; can be either deep or shallow; features are generally cobble or boulder dominated.

Riparian

Pertaining to areas of land directly influenced by water. Riparian areas usually have visible vegetative or physical characteristics reflecting this water influence. Streamsides, lake borders, or marshes and wetlands are typical riparian areas.

Riparian Area

Geographically delineated areas, with distinctive resource values and characteristics, that are comprised of aquatic and riparian ecosystems. On the Mt. Hood National Forest riparian areas typically include areas adjacent to all streams, lakes, and ponds and areas comprising seeps, springs, and wetlands.

Riparian Ecosystems

A transition between the aquatic ecosystem and the adjacent upland terrestrial ecosystem. Identified by soil characteristics and distinctive vegetation communities that require free or unbound water.

Riparian Vegetation

Vegetation growing on or near the banks of a stream or body of water on soils that exhibit some wetness characteristics during some portion of the growing season.

Risk

The degree and probability of loss based on chance.

Runoff

The flow or discharge of water from an area, including both surface and subsurface flow.

RNA

An abbreviation of Research Natural Area.

Road

A general term denoting a way for purposes of travel by vehicles greater than 40 inches in width.

Forest Arterial Road. Provides services to large land areas and usually connects with public highways or other Forest arterial roads to form an integrated network of primary travel routes. The location and standard are often determined by a demand for maximum mobility and travel efficiency rather than specific resource management service. It is usually developed and operated for long-term land and resource management purposes and constant service (FSM 7710.51).

Forest Collector Road. Serves smaller land areas than a Forest arterial road and is usually connected to a Forest arterial or public highway. Collects traffic from Forest local roads and/or terminal facilities. The location and standard are influenced by both long-term multiresource service needs as well as travel efficiency. May be operated for either constant or intermittent service, depending on land use and resource management objectives for the area served by the facility (FSM 7710.51).

Forest Local Road. Connects terminal facilities with Forest collector or Forest arterial roads or public highways. The location and standard are usually controlled by specific resource activity requirements rather than travel efficiency needs (FSM 7710.51).

Roadless Area

See Inventoried Roadless Area.

ROS

An abbreviation of Recreation Opportunity Spectrum.

Rotation Age

The age of a stand when harvested.

Round Wood

Commercially valuable wood that is generally too small to be made into boards.

RPA

The Forest and Rangeland Renewable Resources Planning Act of 1974. Also refers to the National Assessment and Recommended Program developed to fill the requirements of the Act.

RPA Resource Targets

Quantified resource goals stated in the Forest Service Region 6 plan.

RVDs

An abbreviation of Recreation visitor Days.

S

Salable Minerals

Common varieties of sand, stone, gravel, cinders, pumice, pumicite and clay.

Sale Schedule

The quantity of timber planned for sale by time period from an area of suitable land covered by a forest plan. The first period (usually a decade) of the selected sale schedule provides the allowable sale quantity. Future periods are shown to ensure that long term sustained yield will be achieved and maintained. (36 CFR 219.3)

Salmonoid Smolt

Juvenile fish of the salmon/trout family going through biochemical changes during its migration to the ocean.

Sanitation Cutting (Salvage)

The removal of dead, damaged or susceptible trees primarily to prevent the spread of insect pests or diseases and promote forest hygiene.

Satisfactory Range Condition

On suitable range, forage condition is at least fair, with stable trend, and allotment is not classified PC (basic resource damage) or PD (other resource damage).

PC (Basic Resource Damage). Allotments will be classified as PC when analysis or evaluation indicates that one or more of the following conditions exist and livestock use on the allotment is or has been a major factor contributing to this condition.

Maximum summer water temperatures are elevated above state Standards or other approved criteria on SMU class I or II streams and this is largely due to the loss of shade-producing vegetation in the allotment.

Management-induced instability exceeds 20 percent of the total miles of stream (SMU classes I-IV) in an allotment.

Gully development of sufficient size to lower the seasonally saturated zone and change the plant community type is occurring.

Soil condition rating on 25 percent or more of Key Areas is rated poor or very poor.

PD (Other Resource Damage). These allotments may or may not have approved allotment management plans (AMP's), but adverse impacts on resources other than the basic soil and water resources are occurring. These impacts are the result of resources management objectives not being met. An allotment will be classified as PD when 10 percent or more of its area meets this criteria. Damage to vegetation is based on use in excess of that planned.

Saturation Density

(Same as tolerance density.) This term relates to the requirement of many wildlife species for living space. This condition is most marked in territorial species. Space is the limiting factor to the further increases of the population density of these species.

Scarp

A steep surface on the undisturbed ground at the edge of a landslide. Caused by movement of slide material away from the undisturbed ground.

Scenic Areas

Places of outstanding or matchless beauty which require special management to preserve these qualities. They may be established under 36 CFR 294.1 whenever lands possessing outstanding or unique natural beauty warrant this classification.

Scheduled Timber Harvest

Timber harvest that is chargeable to the annual allowable sale quantity for the Forest.

Scoping Process

Determining the extent of analysis necessary for an informed decision of a proposed action. The process includes: (1) reviewing present Management direction as it relates to the analysis; (2) contacting those publics interested or affected by the proposed action to get their opinions and surface the issues; (3) determining local management concerns. This process continues throughout analysis until a decision is made.

Second Growth

Forest growth that has come up naturally after some drastic interference with the previous forest growth (e.g., cutting, serious fire, or insect attack).

Secondary User Species

Wildlife that occupies a site (cavity in a snag or a den) created by another species.

Sediment

Solid material, both mineral and organic, that is in suspension, and is being transported from its site of origin by air, water, gravity, or ice, or has come to rest on the earth's surface either above or below sea level.

Seed Tree Cutting

Removing all mature trees from a stand except for selected seed-bearing trees retained on site to provide a seed source for stand regeneration.

Selection Cut

Selection cutting is the periodic removal of mature trees individually or in small groups from an uneven-aged forest. By this method, both regeneration cutting and tending of immature stand components are accomplished at each entry.

Semi-Primitive Motorized ROS Class

See Recreation Opportunity Spectrum.

Semi-Primitive Non-Motorized ROS Class

See Recreation Opportunity Spectrum.

Sensitive Species

Those species of plants or animals that have appeared in the Federal Register as proposed for classification and are under consideration for official listing as endangered or threatened species, that are on an official State list, or that are recognized by the Regional Forester as needing special management to prevent their being placed on Federal or State lists.

Seral

A biotic community which is a developmental, transitory stage in an ecological succession.

Sheet Erosion

The removal of a fairly uniform layer of soil from the land surface by runoff water.

Shelterwood Cutting

Any regeneration cutting in a more or less mature stand designed to establish a new stand under the protection (overhead or side) of the old stand. Usually the shelterwood involves two separate harvest operations. The first harvest (seed cut) is designed to create space and seed production to establish new trees. The second cut (removal cut) is designed to remove the remainder of the old stand before it begins to compete with the new stand for light and nutrients. This is usually within 10 years. (See also Extended Shelterwood).

SHPO

"State Historic Preservation Officer" means the official appointed or designated pursuant to Section 101(b)(1) of the National Historic Preservation Act to administer the State historic preservation program or a representative designated to act for the SHPO. Among other duties, the State Historic Preservation Officer advises and assists Federal agencies and State and local governments and cooperates with these agencies and others to ensure that historic properties are considered at all levels of planing and development.

Significant Disturbance

When natural recovery would not be expected to take place within a reasonable period of time, there is unacceptable air or water degradation; there is unnecessary or unreasonable injury, loss or damage to National Forest resources.

Silvicultural System

A management process whereby forests are tended, harvested, and replaced resulting in a forest of distinctive form. Systems are classified according to the logging method that removes the mature crop and provides for regeneration and according to the type of forest thereby produced. (36 CFR 219.3)

Silviculture

The art and science of growing and tending forest vegetation for specific management goals.

Single-Tree Selection

In uneven-aged management, harvest of scattered individual trees. Cutting is repeated at frequent intervals, but only a few trees are removed each time.

Site Index

A numerical evaluation of the quality of land for plant productivity which uses height growth as a function of age.

Site Preparation

1) An activity (such as prescribed burning, disking, and tilling) performed on a reforestation area, before introduction of reforestation, to ensure adequate survival and growth of the future crop; OR

2) manipulation of the vegetation or soil of an area prior to planting or seeding. The manipulation follows harvest, wildfire, or construction in order to encourage the growth of favored species. Site preparation may include the application of herbicides; burning, or cutting of living vegetation that competes with the favored species; tilling the soil; or burning of organic debris (usually logging slash) that makes planting or seeding difficult.

Site Productivity

Production capability of specific areas of land to produce defined outputs such as AUMs, cubic feet/acre/yr. etc.

Size Class

For purposes of Forest planning, size class refers to the three intervals of tree stem diameter used for classification of timber in the Forest Plan data base:

less than 5" diameter = seedling/sapling

five to 8" diameter = pole timber

greater than 8" diameter = sawtimber

Slash

The wood residue left on the ground after timber cutting and/or accumulating there as a result of storm, fire, or other damage. It includes unused logs, uprooted stumps, broken or uprooted stems, branches, twigs, leaves, bark, and chips.

Slope

An inclined ground surface, the inclination of which is expressed as a ratio of horizontal distance to vertical distance. The face of an embankment or cut section.

Small Game

Birds and small mammals typically hunted or trapped.

Snag

A standing dead tree.

Smolt

A young salmon during it's migration downstream to the sea after hatching.

Socioeconomic

Pertaining to, or signifying the combination or interaction of, social and economic factors.

Soil

The unconsolidated mineral and organic material on the immediate surface of the earth.

Soil Productivity

The capacity of a soil to produce a specified crop such as fiber or forage under defined levels of management. Productivity is generally dependent on available soil moisture and nutrients, and length of growing season.

SOHA

(Spotted Owl Habitat Area.) An area containing the home range of one or more owl pairs established for the propagation and protection of the species in accordance with a management plan.

Sound Wood

Timber that is free from defect, damage, or decay; i.e., in solid, whole, good condition.

Special Emphasis Program Action Plan

A plan that coordinates the efforts of the Special Emphasis Program Managers as they work toward improving employment opportunities and work place conditions for women, persons with disabilities, and persons of Asian, Black, Hispanic and Native American heritage.

Special Emphasis Watersheds

This designation is applied to selected watersheds where special management emphasizes unusually high combinations of riparian resource values and high sensitivity due to generally demanding site conditions and where the goal is to maintain or improve habitat conditions for the sustained, long-term production of fisheries and high quality water.

Special Places

Those places on the Forest that have special meaning to people. These places can range in size and type from roadside campsite of less than an acre, to a Wilderness Area of several thousand acres. People's reasons for emotional attachment to these sites are as varied as the places they feel close to.

Species Richness Management

A wildlife management strategy to maintain viable populations of all resident species.

Stand

Timber possessing uniformity as regards to type, age class, risk class, vigor, size class, and stocking class.

Standard

A principle requiring a specific level of attainment, a rule to measure against.

Standard Service Level

Each developed site is planned to provide a particular mix of services, these planned services become the standard by which the site is operated.

Strategic Minerals

Those minerals of which the U.S. imports 50 percent or more from foreign sources (based on 1978 U.S. Bureau of Mines figures).

Stream Buffer

See Streamside Management Unit.

Stream Channel Morphology

The structure or form of a stream channel, as influenced by processes of erosion and deposition of channel materials (gravel, cobbles, sand, soil, etc.).

Stream Class

Classification of streams based on the present and foreseeable uses made of the water, and the potential effects of on-site changes on downstream uses. Four classes are defined:

Class I - Perennial or intermittent streams that: provide a source of water for domestic use; are used by large numbers of fish for spawning, rearing or mitigation; and/or are major tributaries to other Class I streams.

Class II - Perennial or intermittent streams that: are used by moderate though significant numbers of fish for spawning, rearing or migration; and/or may be tributaries to Class I streams or other Class II streams.

Class III - All other perennial streams not meeting higher class criteria.

Class IV - All other intermittent streams not meeting higher class criteria.

Stream Discharge

The volume of water flowing past a point per unit time, commonly expressed as cubic feet per second, million gallons per day, gallons per minute or cubic meters per second.

Stream Scour or Channel Scour

Erosion of the channel bottom and/or banks caused by high flows or water, loss of channel stability, or debris torrents.

Stream Structure

The arrangement of logs, boulders, and meanders which modify the flow of water, thereby causing the formation of pools and gravel bars in streams. Generally, there is a direct relationship between complexity of structure and fish habitat. Complex structure is also an indication of watershed stability.

Streamflow

The flow of water, generally with its suspended sediment load, down a well-defined watercourse.

Streamside Management Unit (SMU)

An area of varying width adjacent to a stream where practices that might affect water quality, fish, and other aquatic resources are modified to meet water quality goals, for each class of stream. The width of this area will vary with the management goals for each class of stream, the characteristics of the stream and surrounding terrain, and the type and extent of the planned activity.

Successional Stage

A stage or recognizable condition of a plant community that occurs during its development from bare ground to climax. For example, coniferous forests in the Blue Mountains progress through six recognized stages: grass-forb; shrub-seedling; pole-sapling; young; mature; old growth.

Suitability

The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices. (36 CFR 219.3)

Suitable Range

Land that is accessible or that can become accessible to livestock; that produces forage or has inherent forage producing capabilities; and that can be grazed on a sustained yield basis under reasonable management goals. Suitable range includes both rangeland and forest land with a grazable understory which are contained in grazing allotments.

Supply

The amount of an output that producers are willing to provide at a specific price, time period, and condition of sale.

Suppression

The action of extinguishing or confining a fire.

Surface Resources

Renewable resources located on the earth's surface in contrast to ground water and mineral resources located below the earth's surface.

Surface Runoff

Water that flows over the ground surface and into streams and rivers.

Sustained Yield of Products and Services

The achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the National Forest System without impairment of the productivity of the land. (36 CFR 219.3)

T

Targets

Output accomplishments assigned to the Forest by the Forest Service Regional Forester. A statement used to express planned results to be achieved within a stated period of time.

Temporary Roads

Localized roads of limited duration, typically available for generic forest activities during the life of the project for which the road was constructed.

Tentatively Suitable Forest Land

Forest land that is producing or is capable of producing crops of industrial wood and: (a) has not been withdrawn by Congress, the Secretary, or the Chief; (b) existing technology and knowledge is available to ensure timber production without irreversible damage to soils productivity, or watershed conditions; (c) existing technology and knowledge, as reflected in current research and experience, provides reasonable assurance that it is possible to restock adequately within five years after final harvest; and (d) adequate information is available to project responses to timber management activities.

Terrestrial Habitat

Land area; wildlife species that dwell primarily on land, not aquatic, arboreal or aerial.

Thermal Cover

Cover used by animals to lessen the effects of weather; for elk, a stand of coniferous trees 12 meters (40 feet) or more tall with an average crown closure of 70 percent or more; for deer, cover may include saplings, shrubs, or trees at least 1.5 meters (5 feet tall) with 75 percent crown closure.

Thermal Gradient

The rate of change in heat, or temperature, of the earths crust as you get deeper in the earth. Usually obtained from drill core sampling. Often the thermal gradient is used in analysis of an areas potential for geothermal energy development.

Threatened Species

Any species of animal or plant which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range and which has been designated in the Federal Register by the Secretary of Interior as a threatened species.

Tiering

The coverage of general matters in broader environmental impact statements with subsequent, narrower statements or environmental analyses incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared. Tiering is appropriate when the sequence of statements or analyses is:

(a) from a program, plan, or policy environmental impact statement to a program, plan, or policy statement or analysis of lesser scope to a site-specific statement or analysis.

(b) from an environmental impact statement on a specific action at an early stage to a supplement or a subsequent statement or analysis at a later stage. Tiering is such cases is appropriate when it helps the lead agency to focus on the issues which are already ripe for decision and exclude from consideration issues already decided or not yet ripe.

Timber Classification

Forest land is classified under each of the land management alternatives according to how it relates to the management of the timber resource. The following are definitions of timber classifications used for this purpose.

Nonforest. Land that has never supported forests and land formerly forested where use for timber production is precluded by development or other uses.

Forest. Land at least 10-percent stocked (based on crown cover) by forest trees of any size, or formerly having had such tree cover and not currently developed for nonforest use.

Suitable. Commercial forest land identified as appropriate for timber production in the Forest planning process.

Unsuitable. Forest land withdrawn from timber utilization by statute or administrative regulation (for example, wilderness), or identified as not appropriate for timber production in the Forest planning process.

Commercial Forest. Forest land tentatively suitable for the production of continuous crops of timber and that has not been withdrawn from timber utilization.

Timber Production

The purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use. For planning purposes, the term "timber production" does not include production of fuelwood (36 CFR 219.3)

Timber Sale Program Quantity (TSPQ)

The volume of timber planned for sale during the first decade of the planning horizon. It includes the allowable sale quantity (chargeable volume) and any additional material (nonchargeable volume) planned for sale. Expressed as the average for the first decade.

Timber Stand Improvement (TSI)

The elimination or suppression of the less desirable vegetation in favor of the more desirable tree growth. It includes thinning, cleaning, weeding, and release cuttings.

Toe

The lower, usually curved, margin of the disturbed material of a landslide pushed over onto the disturbed slope.

Tolerant Species

Plants that grow well in shade.

Trail Sensitivity

Sensitivity Level I have prescribed VQOs of retention, partial retention and modification in near-foreground, far-foreground and middleground distance zones respectively.

Sensitivity Level II trails have prescribed VQOs of partial retention modification in near-foreground, far-foreground and middleground distance zones.

Sensitivity Level III trails shall have a prescribed VQO of modification for all distance zones.

Transistory Range

Land that is suitable for grazing use of a nonenduring nature over a period of time. For example, on particular disturbed lands, grass may cover the area for a period of time before being replaced by trees or shrubs not suitable for forage.

Turbidity

The degree of opaqueness, or cloudiness, produced in water by suspended particulate matter, either organic or inorganic. Measured by light filtration or transmission and expressed in Jackson Turbidity Units (JTU).

Twenty-Five Percent Fund Act of 1908

This act provided that twenty-five percent of all moneys received during any fiscal year from each national forest shall be paid, at the end of each year, by the Secretary of the Treasury to the state in which each national forest is located. This money goes to the counties based on the proportion of the national forest in the respective counties. This payment is in addition to the payments in lieu of taxes made under the Payment in Lieu of Taxes Act of 1976.

U

Uncertainty

Whenever a variety of outcomes are possible and a probability of any specific outcome cannot be assigned with any degree of accuracy.

Understory

Vegetation growing under a higher canopy.

Uneven-Aged Management

The application of a combination of actions needed to simultaneously maintain continuous high forest cover, recurring regeneration of desirable species, and the orderly growth and development of trees through a range of diameter or age classes. This management must provide a sustained yield of forest products. Cutting is usually regulated by specifying the number or proportion of trees of particular sizes to retain within each area, thereby maintaining a planned distribution of size classes. Cutting methods that develop and maintain uneven-aged stands are single-tree selection and group selection. (36 CFR 219.3)

Uneven-Aged Silviculture Systems

The combination of actions that result in the creation of forests or stands of trees, in which trees of several or many ages grow together. Cutting methods that develop and maintain uneven-aged stands are single tree and group selecting cutting methods:

Single Tree Selection Cutting. The removal of selected trees of all size classes on an individual basis.

Group Selection Cutting. The removal of all trees in groups for regeneration purposes. The size of the group will be small enough in area that all subsequent regeneration will be influenced by the surrounding uncut stand. Cuts are generally .25 - 2.0 acres in size.

Uniform Flow

A state of steady water flow where the mean velocity and cross sectional area are equal at all sections.

Unroaded Acres

Those areas of undeveloped Federal land within which there are no improved roads maintained for travel by means of vehicles intended for highway use.

Utilization Standards

Standards guiding the use and removal of timber which is measured in terms of diameter at breast height (d.b.h.), top diameter inside the bark (top d.i.b.), and percent "soundness" of the wood.

Unplanned Ignition

A fire started at random by either natural or human caused, or a deliberate incendiary fire.

Unregulated Timber Management

Timber cut from those lands that are not organized to provide sustained yields of timber.

Unsatisfactory Range Condition

Allotment does not meet criteria for satisfactory condition.

Utility and Transportation Corridors

A strip of land designated for the transportation of energy, commodities, and communications by railroad, state highway, electrical power transmission (69 KV and above), oil and gas and coal slurry pipelines 10 inches in diameter and larger, and telecommunication cable and electronic sites for interstate use. Transportation of minor amounts of power for short distances, such as short feeder lines from small power projects including geothermal or wind, or to serve customer subservice substations along the line, are not to be treated within the Forest Plan effort.

V

Value Analysis

A systematic approach to analyzing the function of an item or system to achieve the required results at a minimum total cost consistent with planned objectives.

Value, Market

The unit price of an output normally exchanged in a market after at least one stage of production, expressed in terms of what people are willing to pay as evidenced by market transactions.

Value, Nonmarket

The unit price of an output not normally exchanged in any market at any stage before consumption, and thus must be imputed from other economic information.

Variety Class

A classification system for establishing three visual landscape categories according to the relative importance of the visual features.

Viewshed

The total landscape seen or potentially seen from all or a logical part of a travel route, use area, or water body.

Primary Viewshed The landscape seen from a designated travel route, or designated use area, which has high volume of use, long duration of use, or is a major access to the Forest. The same as Level I Sensitivity to scenic quality.

Secondary Viewshed The landscape seen from a designated travel route, or designated use area, with low use volume, short use duration, or is a minor access route to the Forest. Same as Level II Sensitivity to scenic quality.

Visitor Information Service (VIS)

Activities which interpret for visitors, in layman's language, Forest management, protection, utilization, and research. It also includes interpretation of local botany, geology, ecology, zoology, history, and archaeology.

Visual Condition

The visual appearance of a landscape described in terms of the degree of alteration of the natural appearing landscape. These terms are normally used as a summary rating for a large land area, such as a viewshed corridor. Descriptive degrees of alteration are:

Natural Appearing. Area appears untouched by man; changes are not visually evident. Generally similar to the Retention VQO.

Slightly Altered. Changes may be noticed by the average visitor but do not attract attention. Natural appearance dominates minor disturbances. Generally similar to the Partial Retention VQO.

Moderately Altered. Changes are easily noticed by the average visitor and may attract attention. Disturbances are apparent. Generally similar to the Modification VQO.

Heavily Altered. Changes are strong and obvious to the average visitor. Changes dominate the landscape but may resemble natural patterns when viewed from a distance of 3 to 5 miles. Disturbances are major. Generally similar to the Maximum Modification VQO.

Visual Management System

The management system used to protect and enhance the visual resource.

Visual Quality Objectives (VQO)

Categories of acceptable landscape alteration measured in degrees of deviation from the natural-appearing landscape.

Preservation (P) - Ecological changes only.

Retention (R) - Management activities should not be evident to the casual Forest visitor.

Partial Retention (PR) - Management activities remain visually subordinate to the characteristic landscape.

Modification (M) - Management activities may dominate the characteristic landscape but must, at the same time, follow naturally established form, line, color, and texture. It should appear as a natural occurrence when viewed in foreground or middleground.

Maximum Modification (MM) - Human activity may dominate the characteristic landscape, but should appear as a natural occurrence when viewed as background.

Enhancement - A short-term management alternative which is done with the express purpose of increasing positive visual variety where little variety now exists.

Visual Resource (Forest Scenery)

The composite of basic terrain, geologic features, water features, vegetative patterns, and land-use effects that typify a land unit and influence the visual appeal the unit may have for visitors. Visual resource categories include Retention (R), Partial Retention (PR), and Modification (M).

VQO

An abbreviation of visual quality objective.

W

Water Quality

The biological, physical, and chemical properties of water that make it suitable for given specified uses. Definition of water quality for forest areas is difficult because of the wide range of downstream uses.

Water Yield

The measured output of the Forest's streams.

Watershed

The line separating head-streams which flow to different river systems; it may be sharply defined (crest of a ridge), or indeterminate (in a low undulating area).

Watershed Impact Area

Areas within a watershed which are being hydrologically disturbed by management activities (timber harvest, road construction, etc.) or natural disturbances (wildfire, landslides, etc.). Such areas may adversely affect the hydrologic equilibrium of a watershed by increasing peak flows or decreasing watershed or channel stability. Impact areas are limited to a percent of the total watershed area by Standards and Guidelines in Chapter 4 of the Forest Plan.

Wetlands

Areas that are inundated by surface or ground water with a frequency sufficient to support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. (Executive Order 11990.) Under normal circumstances the area does or would support a prevalence of vegetative or aquatic life.

WFUDs

An abbreviation of Wildlife and Fish User Days.

Wild and Scenic Rivers

Those rivers or sections of rivers designated as such by congressional action under the 1968 Wild and Scenic Rivers Act, as supplemented and amended, or those sections of rivers designated as wild, scenic, or recreational by an act of the Legislature of the State or States through which they flow. Wild and scenic rivers may be classified and administered under one or more of the following categories:

Wild River Areas. Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted These represent vestiges of primitive America.

Scenic River Areas. Those rivers or sections of rivers that are free of impoundments, with watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.

Recreational River Areas. Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

Wilderness

Areas designated by congressional action under the 1964 Wilderness Act. Wilderness is defined as undeveloped Federal land retaining its primeval character and influence without permanent improvements or human habitation. Wilderness areas are protected and managed to preserve their natural conditions, which generally appear to have been affected primarily by the forces of nature, with the imprint of human activity substantially unnoticeable have outstanding opportunities for solitude or for a primtive and unconfined type of recreation; include at least 5,000 acres or are of sufficient size to make practical their preservation, enjoyment, and use in an unimpaired condition; and may contain features of scientific, educational, scenic, or historical value as well as ecologic and geologic interest.

Wilderness Resource Spectrum (WRS)

Standard and guidelines for managing Wilderness within the nondegradation policy have been developed under the Wilderness Resource Spectrum (WRS) concept. In the Pacific Northwest Region, the WRS classification system has been adopted to establish a variety of settings to meet Wilderness management and should not be confused with the Recreation Opportunity Spectrum; classification system. WRS classifications are determined by measured criteria which describe the social, biological, and physical characteristics of the area. Three primary zones are:

Primitive Trailless. This zone offers the maximum possible solitary Wilderness experience. To qualify for this designation, the zone must be large enough to allow at least two days of cross-country travel without crossing a constructed trail. No more than one encounter with another user may be expected. The Forest does not contain this class of Wilderness zone.

Primitive Trailed. This zone offers the most solitary experience to be found on the Forest. The only facilities permitted are those needed to protect the environment. In practice, this means the presence of trails and a limited number of signs only. A user amy expect to encounter no more than six other parties per day during 80% of the use season.

Semi-Primitive Trailed. This zone offers somewhat less solitary Wilderness experience than the Primitive Trailed. Activities to control degradation of the ecological and social values of the Wilderness are evident. Limited development, including toilets, are permitted. The number of encounters with other users is not expected to exceed 12 parties per day during 80% of the season.

Transition. In this zone encounters with other users in some areas exceed those specified for the Semi-Primitive Trailed zone making it desirable to identify areas where the heaviest use of the Wilderness takes place. Higher intensities of Mangement activity in a Transition Zone are evident. More signs are in the zone, and trails may be constructed to higher standards. Encounters with other users is expected to be 18 or less per day during 80% of the season.

Wilderness Values

Those social and/or biological values, or combination of that are generally only provided by the Wilderness Resource; for example, natural operating ecological processes, outstanding opportunities for solitude and primitive recreation, and freely operating wildlife populations.

Wildfire

Any wildland fire not designated and managed as a prescribed fire within an approved prescription.

Wildlife and Fish User Day (WFUD)

One WFUD consists of 12 hours of recreation use that is the result of fish or wildlife resources.

Winter Range

The area available to and used by big game through the winter season.

Withdrawal

An order removing specific land areas from availability for certain uses.

Woody Material

Large logs necessary for stream channel stability and maintenance of watershed condition.

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